



# ANTENATAL GUIDELINES

FOR PRIMARY HEALTH CARE IN CRISIS CONDITIONS



ICRC

# **ANTENATAL GUIDELINES FOR PRIMARY HEALTH CARE IN CRISIS CONDITIONS**

Cristina Otero Garcia  
General nurse, paediatric nurse and midwife

To all the patients I have ever cared for, whether at the dawn or in the twilight of their lives, whose courage, strength, humility and nobleness of spirit – whose glances and smiles – have brought me and taught me so much.

Cristina Otero Garcia

PHOTOS

Cover: WINIGER Edouard / ICRC, Thailand, 1983

Back cover: AGUIRRE Nathalia /ICRC, South Sudan, 2004

---

International Committee of the Red Cross  
Health and Relief / Geneva  
19 Avenue de la Paix  
1202 Geneva, Switzerland  
**T** + 41 22 734 6001 **F** + 41 22 733 2057  
**E-mail:** [icrc.gva@icrc.org](mailto:icrc.gva@icrc.org) or [shop.gva@icrc.org](mailto:shop.gva@icrc.org)  
**www.icrc.org**  
© ICRC, May, 2005

## **Acknowledgements**

Grateful acknowledgements are due to the following people for helping to make this book possible:

### **Consultants**

Dr Michel BOULVAIN, obstetrician-gynaecologist, Hôpitaux Universitaires de Genève

Dr Eric BURNIER, infectious diseases specialist, ICRC health services unit

Dr Catherine DELAISSE, medical delegate, MPH (Master Public Health), ICRC

Ana Gerlin HERNANDEZ BONILLA, nutritionist, ICRC economic security unit

Dr Judith HERRERRA, primary health care programme manager, ICRC

Dr François IRMAY, head surgeon, ICRC

Dr Hervé LE GUILLOUZIC, head of the ICRC health services unit

Marlène MICHEL, primary health care coordinator, ICRC health services unit

Dr Pierre PERRIN, chief medical officer, ICRC

Antje VAN ROEDEN, senior adviser, ICRC planning, monitoring and evaluation unit

Dr Cordula WOLFISBERG, medical services for detainees, ICRC health services unit

### **Editorial and secretarial staff**

Hezia ABEL WALPOLE, Rowena BINZ, Sarah FLEMING and Christopher SNOW

Stéphanie ARSAC JANVIER, Ahmed BERZIG, Anne DEMIERRE, Marie-Thérèse ENGELBERTS LEONE, Chris GIANNOU, Jennifer HAYWARD KARLSSON and Mark STEINBECK deserve special thanks for their helpful comments and suggestions.

## CONTENTS

---

<b>Purpose of this document</b>	<b>P 9</b>
<b>Introduction</b>	<b>P 10</b>
 <b>Part I : Antenatal care programmes</b>	
<b>Aims of antenatal care</b>	<b>P 15</b>
<b>ICRC Assistance Policy</b>	<b>P 16</b>
<b>Setting up an antenatal care programme</b>	
<i>Initial assessment of needs</i>	<b>P 18-25</b>
<i>Planning the programme</i>	<b>P 26-27</b>
<b>Monitoring an antenatal care programme</b>	<b>P 28-37</b>
<b>Basic and emergency equipment</b>	<b>P 38-40</b>
<b>Health education</b>	<b>P 41-42</b>
<i>Training traditional birth attendants</i>	<b>P 42-44</b>
<i>Health education for pregnant women</i>	<b>P 45</b>
 <b>Annexes</b>	
<b>I.A</b> <i>International Humanitarian Law</i>	<b>P 48</b>
<b>I.B.1-3</b> <i>Planning for Results (PFR)</i>	<b>P 49-51</b>
<b>I.C.1-3</b> <i>Sample ANC service indicators</i>	<b>P 52-54</b>
<b>I.D</b> <i>Checklist for safe motherhood services</i>	<b>P 55</b>
<b>I.E.1-3</b> <i>New WHO antenatal care model</i>	<b>P 56-58</b>
<b>I.F.1-5</b> <i>Antenatal care quality service assessment</i>	<b>P 59-63</b>
<b>I.G.1-2</b> <i>List of drugs with their ICRC order code</i>	<b>P 64-65</b>

**Part II : Antenatal consultations**

<b>Medical records</b>	<b>P 69-71</b>
<b>Diagnosis of pregnancy and Calculation of term</b>	<b>P 72-73</b>
<b>Physiological changes in pregnancy</b>	<b>P 74-85</b>
<b>Initial medical assessment</b>	<b>P 86</b>
<b>Standard antenatal consultation</b>	<b>P 87-95</b>
<b>Cases to be referred for delivery</b>	<b>P 96-99</b>
<b>Emergency obstetric care</b>	
General information	<b>P 100-101</b>
Emotional and psychological support	<b>P 102-104</b>
Management of emergency cases:	<b>P 105</b>
- Convulsions or loss of consciousness (schedules for magnesium sulfate and diazepam enclosed)	<b>P 106-109</b>
- Fever	<b>P 110-113</b>
- Respiratory distress	<b>P 114-115</b>
- Vaginal bleeding	<b>P 116-121</b>
- Abdominal pain	<b>P 122-123</b>
- Prolapsed cord	<b>P 124-125</b>
- Unsatisfactory progress in labour	<b>P 125</b>
- Trauma	<b>P 126-127</b>
<b>Annexes</b>	
<b>II.A.1-5</b> Controlled cord traction with illustrations of placental delivery	<b>P 130-134</b>
<b>II.B</b> Guidelines for rehydration	<b>P 135</b>

## CONTENTS

---

### **Part III: Antenatal problems**

<b>Anaemia</b>	<b>P 139</b>
<b>Female genital mutilation (FGM)</b>	<b>P 140-142</b>
<b>Fever</b>	
Malaria	<b>P 143-146</b>
Urinary tract infection	<b>P 147</b>
<b>Hypertensive disorders in pregnancy</b>	<b>P 148</b>
Management of mild or severe chronic hypertension	<b>P 149</b>
Management of pregnancy - induced hypertension	<b>P 149</b>
Mild pre-eclampsia	<b>P 150-151</b>
Management of severe pre-eclampsia and eclampsia	<b>P 151</b>
<b>Loss or diminution of foetal movements</b>	
Foetal death	<b>P 152-153</b>
Foetal growth retardation	<b>P 154</b>
<b>Malpresentations</b>	
Breech	<b>P 155-156</b>
Transverse	<b>P 157-158</b>
<b>Pregnancy after rape / Rape of pregnant woman</b>	<b>P 159-161</b>
<b>Pregnancy in detention</b>	<b>P 162-163</b>
<b>Pregnancy in teenagers</b>	<b>P 164-165</b>
<b>Prelabour rupture of membranes (PROM)</b>	<b>P 166-167</b>
<b>Sexually transmitted diseases</b>	
Viral hepatitis	<b>P 168-169</b>
HIV/AIDS	<b>P 169-170</b>
Gonorrhoea	<b>P 171-172</b>
Chlamydia trachomatis	<b>P 172-173</b>
Syphilis	<b>P 173-174</b>

**Part III: Antenatal problems (contd.)**

<b>Tetanus prophylaxis</b>	<b>P 175-177</b>
<b>Threat of premature delivery / Preterm labour</b>	<b>P 178</b>
<b>Twin pregnancy</b>	<b>P 179-181</b>
<b>Vaginal bleeding</b>	<b>P 182</b>
<i>Abortion</i>	<b>P 183</b>
<i>Ectopic pregnancy</i>	<b>P 183-184</b>
<i>Molar pregnancy</i>	<b>P 185</b>
<i>Placenta praevia</i>	<b>P 186-187</b>
<i>Abruptio placentae</i>	<b>P 188-189</b>
<b>Vaginal discharge</b>	<b>P 190-191</b>
<b>Vitamin A deficiency</b>	<b>P 192</b>
<b>Annexes</b>	
<b>III.A. 1-2 Vaccination and pregnancy</b>	<b>P 194-195</b>
<b>III.B Vitamin A, Iron and Folic Acid food sources</b>	<b>P 196</b>
<b>BIBLIOGRAPHY</b>	<b>P 198-200</b>



## ***PURPOSE OF THIS DOCUMENT***

These guidelines are designed for ICRC and other health professionals – nurses, midwives, doctors – who either lack experience in antenatal care or are not used to working in countries where medical infrastructure is underdeveloped or non-existent.

### ***Their purpose is to:***

- provide staff involved in running antenatal care programmes with a concentrated source of information on the subject, with no claims to exhaustive coverage
- direct readers to other works that deal with antenatal care in greater depth
- ensure that a standard approach is taken to ICRC antenatal care programmes

Each team will have to adapt the guidelines locally according to:

- the type of community in which it is working
- the available health facilities
- the ICRC's constraints in the country where the team is based

These guidelines deal only with the first level of health care, that is to say the community health centre, and not with the second and third levels (reference and district hospitals). They cover the antenatal period, which begins when a woman suspects that she is pregnant and ends when she starts labour, but not the delivery or the postpartum period.

	<b>OBSTETRICS</b>			<b>GYNAECOLOGY</b>
	<b>Antenatal</b>	<b>Intrapartum</b>	<b>Postnatal</b>	
<b>LEVEL 1</b>				
<b>Emergencies</b>				
<b>LEVEL 2</b>				
<b>Emergencies</b>				
<b>LEVEL 3</b>				
<b>Emergencies</b>				

 **Treated in this document**

## **INTRODUCTION**

---

*Throughout the years, the ICRC has been improving its ability to protect and assist conflict victims with a view to saving lives, alleviating suffering and restoring human dignity in an ever more complex world. In April 2004 it adopted a new assistance policy defining core activities in the areas of water and habitat, economic security and health care. With regard to health care, it decided to focus its efforts on emergency hospital care, hospital management, first aid, primary health care, support for victims of sexual violence, health in detention and physical rehabilitation.*

*Taking the comprehensive meaning of primary health care into consideration, the health services unit defined a minimum package of activities that could be carried out in acute and chronic crisis conditions. The package includes treatment for most common diseases using essential drugs; mother and child care; vaccination campaigns; and water, sanitation and nutrition programmes.*

*Within the area of mother and child care, antenatal care plays a key role in reducing death, disease and suffering among women, whose vulnerability is always exacerbated by armed conflict and poor security conditions.*

*The death of a mother during pregnancy or delivery is a tragedy that affects not only families but society as a whole. The risk of dying during pregnancy or delivery is 175 times higher for African women than it is for women in developed countries. At the global level, 13 underdeveloped countries account for 70 per cent of maternal deaths. The highest figures are for Sierra Leone, Afghanistan, Malawi, Angola and Niger.<sup>1</sup>*

*Maternal mortality and morbidity are associated with preventable patterns: Late detection of complications - Late arrival in a medical centre - Delayed quality-care provision.*

*Given the great variety of cultural settings in which we work, health staff must keep in mind the weight of local pregnancy-related beliefs that will have a direct impact on access to and use of antenatal care services.*

---

<sup>1</sup> Press Release WHO/77, 20 October 2003 (compilation of data from WHO, UNICEF and UNFPA).

These **Antenatal Guidelines for Primary Health Care in Crisis Conditions** are the result of collaboration between ICRC staff at headquarters in Geneva and colleagues in the field. They serve two main purposes:

*To provide field staff with the basic practical information they need to run an antenatal clinic in situations that may vary greatly from one country to another.*

*To highlight the specific nature of antenatal care within the framework of protection activities and international humanitarian law. With this aim in mind, particular attention has been paid to sexually transmitted infections, sexual violence, the health of mothers in places of detention and the access of mothers to care and home delivery services in situations where it might be dangerous for them to leave home.*

*In view of the need to ensure the sustainability of assistance programmes, these guidelines must also be considered as a training tool for the national staff without whom we could hardly pursue our activities.*

*We hope that these guidelines will be a useful contribution to discussions on how to further improve our mother-and-child care and protection activities.*

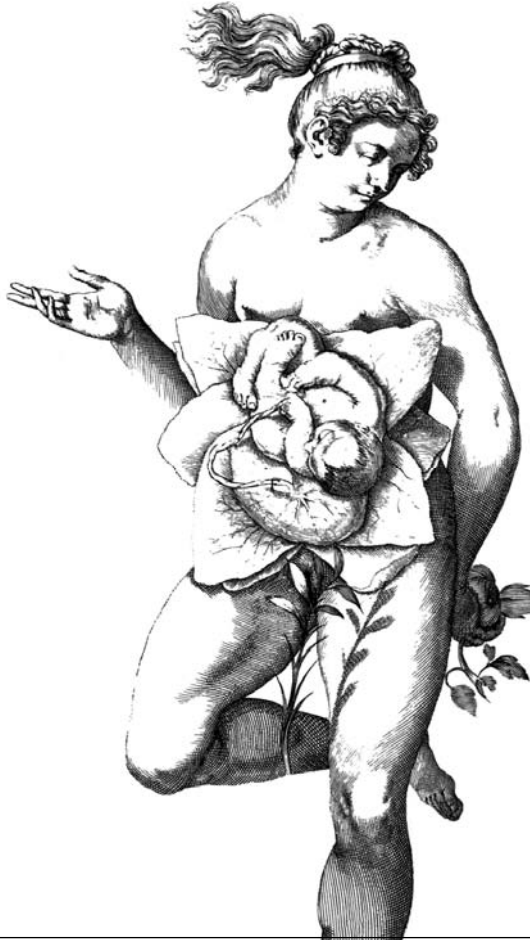


*Hervé Le Guillouzic*

Dr Hervé Le Guillouzic,  
Head of the ICRC health services unit



# ➔ Antenatal Care Programmes



*" To all women who weave cloth and tales...  
To all women who influence time  
and shape the destiny of men ..."*

## **Part I : Antenatal care programmes**

### **Aims of antenatal care**

#### **ICRC Assistance Policy**

#### **Setting up an antenatal care programme**

*Initial assessment of needs*

*Planning the programme*

#### **Monitoring an antenatal care programme**

#### **Basic and emergency equipment**

#### **Health education**

*Training traditional birth attendants*

*Health education for pregnant women*

#### **Annexes**

**I.A** *International Humanitarian Law*

**I.B.1-3** *Planning for Results (PFR)*

**I.C.1-3** *Sample ANC service indicators*

**I.D** *Checklist for safe motherhood services*

**I.E.1-3** *New WHO antenatal care model*

**I.F.1-5** *Antenatal care quality service assessment*

**I.G.1-2** *List of drugs with their ICRC order code*

## AIMS OF ANTENATAL CARE

---

Pregnancy and childbirth are not illnesses and as long as the mother is healthy there is usually no cause for alarm. Nevertheless, conditions may arise during pregnancy that are not necessarily obvious and may not always make the mother feel ill, but that if left untreated could be dangerous for the mother or baby. Such conditions may need to be monitored by a well-trained health professional and the baby may need to be delivered in a hospital.

The purpose of antenatal care is to diagnose any dysfunction during pregnancy so as to anticipate problems and take the appropriate steps for a healthy delivery.

This can be achieved by:

- ✓ monitoring the health of the mother
- ✓ monitoring the health of the foetus
- ✓ detecting risk factors
- ✓ advising the mother how to look after her health and that of her baby

The ICRC works in countries where mothers may not always be in good health or have access to appropriate medical care. The guidance provided in the following chapters is tailored to the specific situations that can be found in those countries.

Even if from a physiological point of view pregnancy is the same for each woman on earth, it is always surrounded by specific cultural beliefs. Everyone should be aware that such beliefs exist, remain open to them and, in so far as there is no danger for the mother or her foetus, not oppose them.

# ICRC ASSISTANCE POLICY

---

In April 2004 the ICRC adopted a new Assistance Policy (AP) defining core activities in the fields of water and habitation, economic security and health care. In order to clarify the framework in which the ICRC conducts its activities in the area of primary health care, and more specifically in that of mother and child care (including antenatal care), various points of this policy are summarized below.

If assistance activities are to be effective, they must go hand in hand with protection work aimed at ensuring respect for the fundamental rights of conflict victims.

For more information about the rights of expectant mothers under international humanitarian law, *see annex I.A, page 48.*

## **Implementation**

See AP 5.3 Implementation and 5.3.3 Health

The ICRC adapts its response to the situation.

In emerging or acute crises, the ICRC provides support for basic health services, pre-hospital and emergency hospital care.

The basic services are selected from among the components of primary health care,<sup>2</sup> which include mother and child care.

In chronic crises and post-crisis situations, the ICRC may consider providing support for a broader range of primary health care activities.

See AP Annex 4.6 Minimum package of activities derived from primary health care

Within this preventive, curative and participative framework, primary health care provides a vast range of services. Among these the ICRC has designated a minimum set of core activities including mother and child care, which encompasses antenatal care.

---

<sup>2</sup> *Primary health care is a process in which the community takes part. Carried out in consultation with civil society, it aims to assess health related needs and to implement health activities in the following fields: (1) ambulatory health care using essential drugs; (2) mother and child care, including family planning; (3) expanded immunization programmes; (4) programmes to fight communicable diseases; (5) health and hygiene promotion; (6) health education; (7) mental health; (8) water; and (9) nutrition.*



## **Modes of action**

See AP 4.3 Strategies: 4.3 Combining different modes of action

The ICRC uses **persuasion**, **mobilization** and, where necessary, **denunciation** to induce the authorities to meet their obligation to provide essential services for the affected groups. Where the ICRC considers that its efforts are not going to bring about a satisfactory, timely response from the authorities, and that the problem is a serious one, it may simultaneously engage in appropriate **support** and/or **substitution** / direct provision activities.

ICRC delegations must decide how best to combine and introduce different modes of action in order to optimize the impact of their activities.

## **Planning programmes and projects**

See AP 6 Operational directives: 6.3 to 6.5

- ✓ In designing assistance programmes and projects, ICRC staff must respect the methods laid down in the ICRC's «Planning for Results» (Pfr) process (see annexes I.B.1-3, pages 49-51).
- ✓ The ICRC must have the skills and logistical capacity needed to carry out its core activities rapidly and effectively.
- ✓ Entry and exit strategies must be provided for in the initial plans and, for exit strategies in particular, must be drawn up together with the other entities concerned.

# SETTING UP AN ANTENATAL CARE PROGRAMME

Before setting up an antenatal care programme, it is essential to carry out an initial assessment of needs and to plan the programme with great care.

## **FIRST STEP: INITIAL ASSESSMENT OF NEEDS**

### ***Initial assessment as defined in ICRC Assistance Policy (AP)***

See AP 6. Operational directives: 6.2. Assessing the situation – integrated needs and background analysis

The assessment of assistance needs must be based on an information network that is as broad as possible and must include a wide range of issues and areas of endeavour. These must encompass not only assistance related areas of activity, but also those relating to protection of the group concerned and security.

6.2.1 Initial assessment of needs

6.2.2 Assessment methods

6.2.3 Assessment partners

6.2.4 Assessment reports

### ***Assessing antenatal care needs***

The initial assessment of assistance needs must take into account the existence, quality and accessibility of all the services available to the population. Once the ICRC has decided to set up an antenatal care programme, it will be necessary to carry out a further assessment of needs specific to this type of activity. The general procedure for carrying out such an assessment is explained below, but it needs to be adapted to antenatal care and to local conditions.

Whatever the particular constraints may be, antenatal care will achieve its basic aims if it ensures that advice and preventive treatment are given to pregnant women.

At the very least, the ICRC considers that an antenatal care package must include the following:

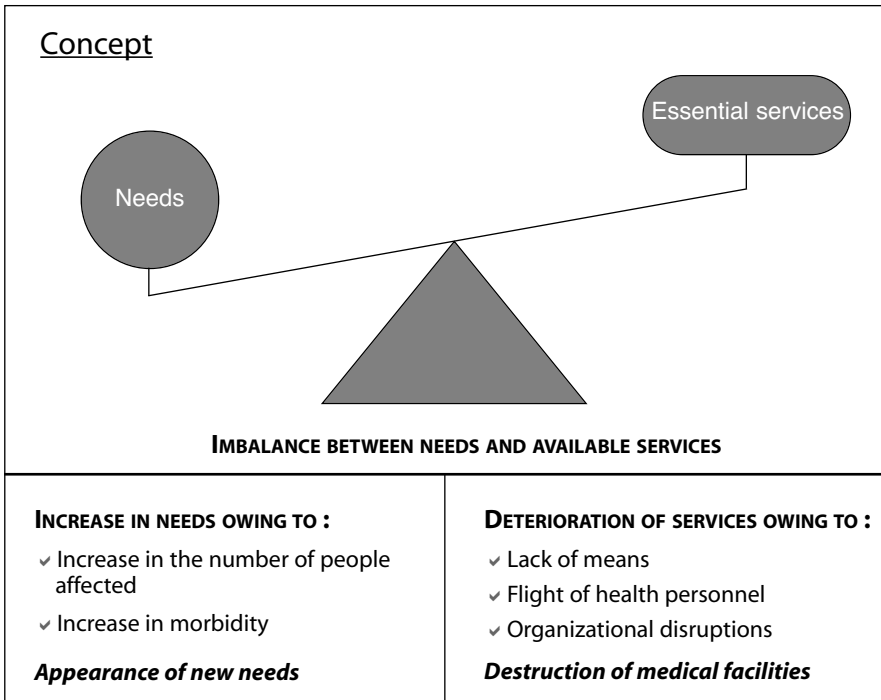
- ✓ Prevention of malaria and anaemia
- ✓ Tetanus immunization
- ✓ Personalized information for mothers

At the very most, it could also include:

- ✓ Screening
- ✓ Care
- ✓ Referral to secondary health care services
- ✓ Emergency obstetric care at the primary health care level
- ✓ Training and coaching of traditional birth attendants in countries where they already exist
- ✓ Health education programme

Each antenatal care package must be defined at the same time as the programme, in accordance with national policies and standards, if any exist, and taking the local situation into account. Different packages may be defined for different programmes.

**Initial assessment as defined in «Boîte à outils pour l'analyse et la résolution des problèmes» (see bibliography)**



The problems to be identified result from an imbalance between the needs of the population and the ability of local services to meet them. It is therefore essential to assess not only the population's state of health, nutritional status and so forth, but also the state of agricultural, health and other services.

The initial assesment must provide the information needed to:

- ✓ make decisions when determining priorities for action, taking into account not only the consequences of a problem, but also its causes;
- ✓ anticipate future developments with a view to reducing the risks which in any case must be taken in this type of situation as much as possible.

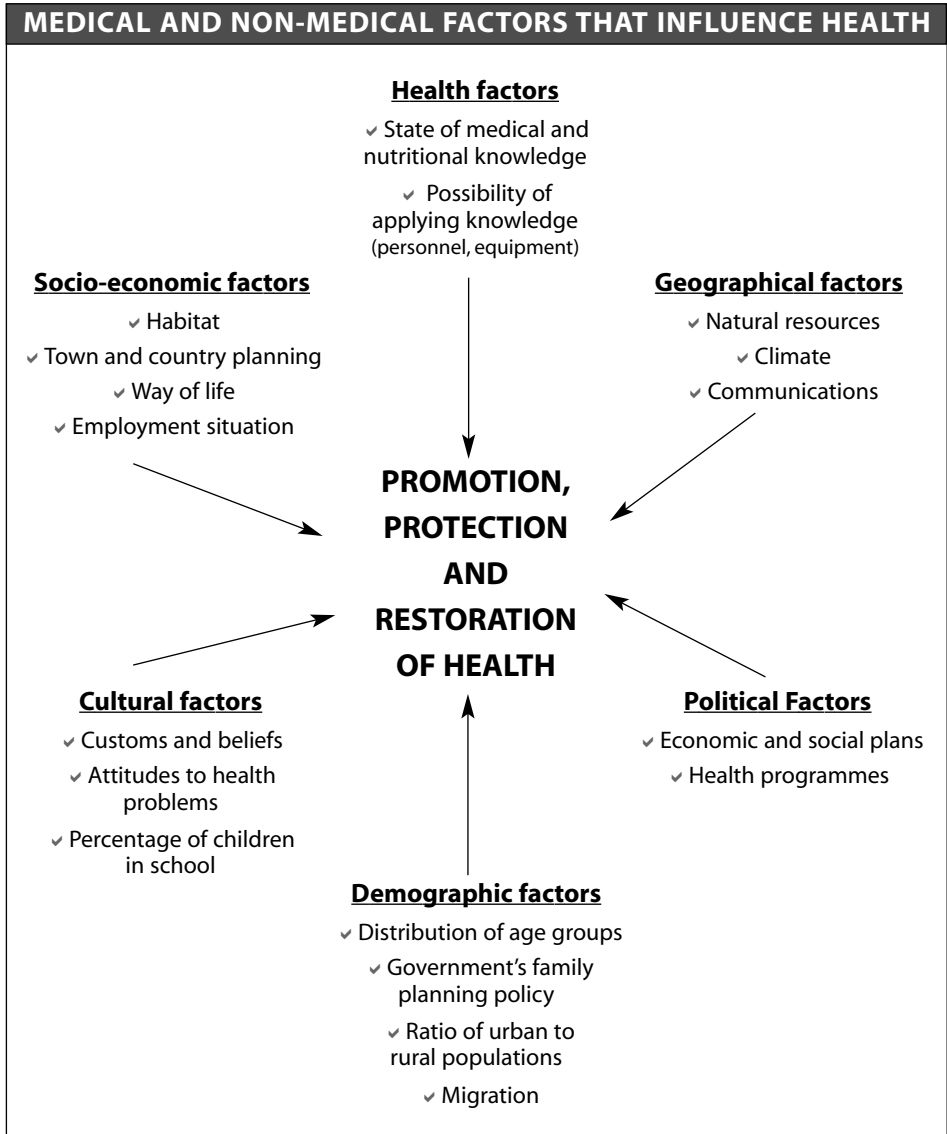
**Problems**

Identifying problems

The assessment team must measure the degree of imbalance between the physiological, social, security and other needs of the population and the capacity of local services to meet them. This imbalance is what humanitarian assistance seeks to correct.

Data gathering

In order to identify problems, it is necessary to gather data on the population and its environment in the broadest sense, including physical, climatic, social (health services), economic (access to food) and other types of environment.



### Summarizing the data

Large quantities of data may be difficult to analyse. Begin by selecting what is truly relevant, then summarize the main points, drawing them together in such a way as to provide a clear and simple picture of the situation.

### Analysing the data

It is not enough to simply identify health problems. An assessment team is expected to analyse them as well, taking into consideration:

- ✓ The determining factors

It is essential to know what the previous living conditions of the population were so as to be able to weigh the analysis of current health problems.

- ✓ The scale of the problems

It is not enough to simply perceive problems. It is important to try and quantify them (scale, number of people affected). Search for data collected before the disaster, gather new data according to precise criteria (morbidity, daily mortality, litres of water delivered each day at a specific pump, etc.).

- ✓ The context

Problems occur in specific environmental, economic, socio-cultural and political contexts that must also be analysed during the initial assessment of needs. Most of the constraints that will later limit the possibilities of action will be encountered at this level.

### **Setting priorities**

Every emergency situation is made up of a multitude of problems that cannot all be dealt with at once. It is therefore important to set priorities, doing so on the basis of precise criteria and not according to the whim of the moment.

#### Criteria for setting priorities

Two main factors must be taken into account when setting priorities:

- ✓ The scale of the problems
- ✓ The urgency of the problems

These two factors can be measured using data on the number of people affected, the deterioration of local services, morbidity and mortality.

However, a problem can only be a priority for action to the extent that it is truly possible to act. Consequently, it is essential to determine:

- ✓ the feasibility of a technical solution
- ✓ the weight of constraints
- ✓ the impact that action will have on the problem.

#### Examples of constraints

##### 1. POLITICAL CONSTRAINTS

*Raison d'état*  
State sovereignty  
Disinformation  
Insecurity

##### 2. LOGISTICAL CONSTRAINTS

Time needed to convey goods  
Customs formalities  
Storage problems  
Communication routes

##### 3. ORGANIZATIONAL CONSTRAINTS

Mobility of victims  
High number of victims  
Administrative disorganization  
Inexperience of health professionals

##### 4. FINANCIAL CONSTRAINTS

High cost of aid operations  
Funding policies that privilege certain types of operations over others.

Depending on the technical feasibility of taking action, the specific constraints encountered on the spot and the expected impact of the operation, it may be necessary to confine oneself to certain types of problems, certain categories of victims or certain geographical areas. However, such restrictions must not be considered permanent. When action is impossible for security reasons, for example, negotiations must be started with the responsible authorities with a view to overcoming this difficulty. Initially, therefore, the priority will be to negotiate. In case of success, it will then be possible to act.

**At the time of initial assessment it is important to ensure that:**

**The programme is adapted to local conditions, to this end:**

- ✓ meet with representatives from the Ministry of Health and with professionals who can provide the required information and the advice and support needed to set up the programme
- ✓ take into consideration the views of the population and local staff since they know the country, place or culture better than expatriates do and their direct involvement will help ensure that the programme is sustainable
- ✓ comply with the national health policy and with national health standards
- ✓ assess (with the help of any anthropological studies that may be available) the cultural factors that bear on the management of pregnant women, such as:
  - beliefs surrounding birth
  - customs surrounding birth
  - sexual behaviour
  - the place of women in society and their usual occupations
  - the place of men and children in society and their usual occupations
  - population movements
  - any other relevant cultural factors

**The necessary human resources are available**

It is essential to determine what kind of professionals are needed, national ones as well as expatriates with the right profile, and whether they are available or not.

The sustainability of the programme will depend mainly on the capacity of national staff to provide high-quality antenatal care services on a long-term basis. If there is a lack of well-trained professionals on the spot, then look for them elsewhere in the country, if possible with the help of the authorities. Another possibility is to select people for training courses, which should be conducted in accordance with national standards so as to ensure that any certificates or diplomas delivered are recognized.

Training local personnel is always an essential component of antenatal care programmes. If further training is considered, remember that it is often uncertain whether after obtaining a diploma trainees will return to their former workplaces or look for jobs elsewhere. One solution could be to have them make a commitment.

The first step to take when starting an antenatal care programme is to find a well-trained local midwife to work with, or, if none can be found, to set up a team comprising an expatriate midwife and an untrained local midwife.

### **Final remarks**

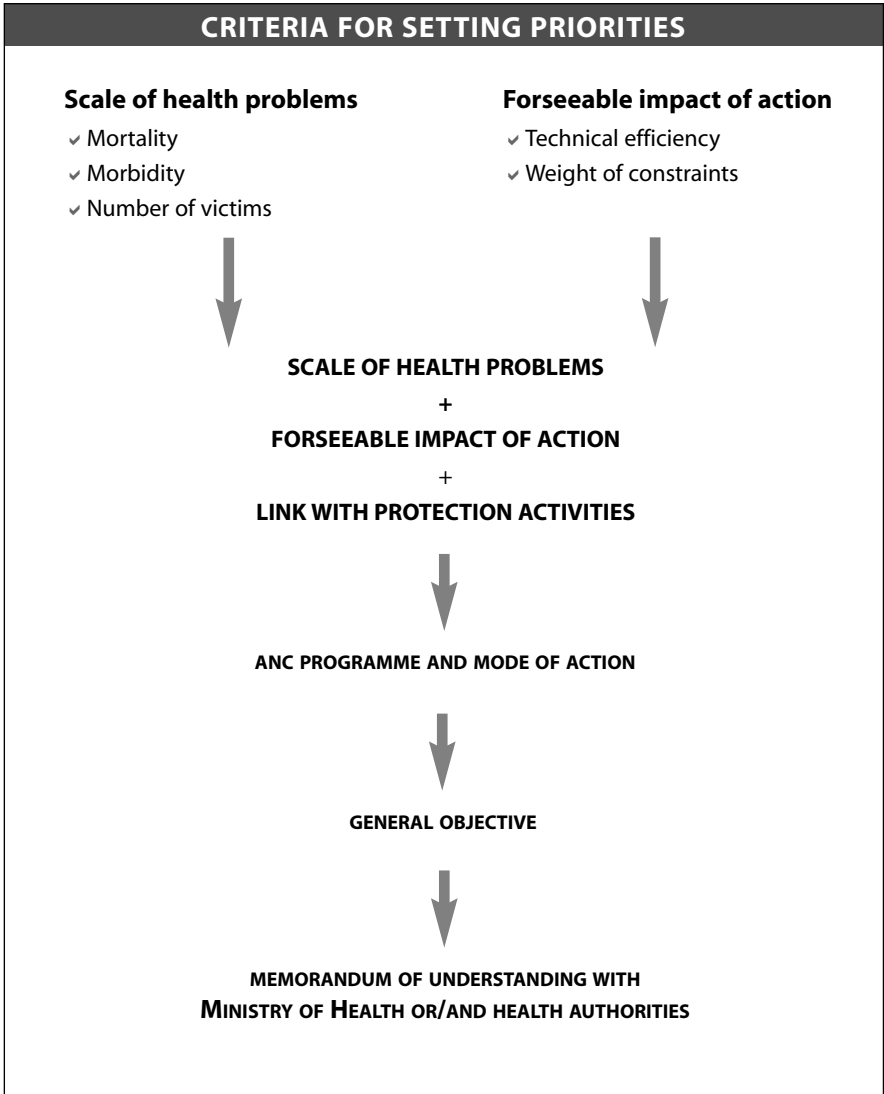
In order to establish a solid base right from the start, it is essential to spend time on the spot gathering the necessary information before launching the programme. This will save time, energy and money later on.

Remember that an adequate referral facility should be available in case of complications (*for further information, see "Emergency obstetric care" pages 100-105*). Owing to poor security conditions, long distances, lack of transport and other problems, this may not always be possible. However, every effort must be made to overcome whatever problems there are and to prepare for potential difficulties ahead.

Before offering a new service to pregnant women, it is important to know exactly what can and cannot be done in order to avoid raising false hopes.



**Once the ICRC has decided to set up an antenatal care programme after considering the initial assessment, the following steps should be taken before planning it.**



## **SECOND STEP: PLANNING THE PROGRAMME**

### **Planning as defined in «Boîte à outils pour l'analyse et la résolution des problèmes» (see bibliography)**

#### **Setting objectives**

##### Concept

Setting objectives is the most difficult part of the planning process. It consists in translating often very general ideas into specific activities.

##### Describing objectives

Objectives should be defined according to the following rules with a view to moving from abstract to concrete:

- ✓ Always use an active verb to express an objective
  - ✓ Describe and quantify the content of each objective
- “An objective must mention:
- What: the situation or condition to be reached
  - How much: the quantity or amount to be reached
  - How long: the expected time it will take to produce the desired effect
  - Who: the group of people or catchment area targeted by the programme
  - Where: the catchment area covered by the programme.”<sup>3</sup>

For further information on antenatal care objectives, see *annexes I.C.1-3, pages 52-54*.

#### **Breaking down activities into tasks**

Further along in the planning process activities must be broken down into specific tasks. This will make it easier to determine what resources are needed.

#### **Mobilizing resources**

Preliminary investigations will already have been made during the initial assessment. At the planning stage, the following questions are essential:

- Do local resources exist?
- Does the target population have access to local resources?

Resources may be divided into four categories:

- Human resources
- Material resources
- Means of transport
- Financial resources

Lack of resources may make it necessary to modify objectives.

---

<sup>3</sup> W. Reinke, *Health Planning: An overview of the planning process*, 1972, p. 63

### **Final remarks**

When drawing up a plan of action it is important to ensure that it is realistic and adapted to existing constraints. Particular consideration must be given to what resources are needed and which are available. The referral system must also be taken into account in case of complications or emergencies (see «*Emergency obstetric care*», pages 100-105).

Given the frequent turnover of expatriate staff, it is also vital to have a plan of action so as to guarantee the quality and sustainability of services. This will lead to greater professionalism and credibility.

# MONITORING AN ANTENATAL CARE PROGRAMME

## *Monitoring as defined in ICRC Assistance Policy (6. Operational Directives)*

### **6.6 Monitoring**

From the beginning, a system is put in place for situation monitoring and performance monitoring to ensure the systematic and continuous assessment of progress over time in using selected indicators. This monitoring system will promote timely and appropriate decision making.

### **6.7 Review and evaluation**

Monitoring must be supplemented by reviews and independent evaluations. These are intended to draw lessons that can be used to improve policies and practices, and help enhance the organization's overall performance, transparency and accountability.

## **General information on monitoring**

### Monitoring activities

- ✓ Why (purpose of monitoring)
- ✓ What:
  - quality of care
  - progress towards desired results (output, outcome, impact) taking timing and input (human, financial and logistical resources, etc.) into consideration
- ✓ How (by collecting data and tracking indicators)
- ✓ Who should be involved and at what stage

If the purpose is to evaluate the programme as a whole, it is important to ask the following questions:

- ✓ Does the combination of materials, activities and administrative arrangements that constitute the programme seem to lead to the achievement of its objectives?
- ✓ To what extent were stated programme objectives attained?
- ✓ What other results did the programme produce?
- ✓ How well did the participants do?
- ✓ Was there support for what went on in the programme?

One of the aims of every antenatal care programme is to give national staff the training they need to provide quality care and be able to run the programme on their own. Once the specific objectives of the programme have been set, it will be necessary to ensure that expatriates have the tools they need to evaluate the quality of care provided by the programme. These tools include checklists and indicators, for which the necessary data will have to be collected (see below).

When evaluating the quality of care, do not forget that it can also be useful to ask the referral hospital for its opinion about the relevance of the cases referred to it. Moreover, it is essential to ensure that staff members enjoy good personal relations and respect one another so that criticism can be taken in a positive and constructive way.

## **Collecting and analysing data**

Before starting an antenatal care programme it is important to determine what data need to be collected and analysed.

### What should be measured?

- Decide what to look for. Which features of the programme are most critical or valuable to describe?
- Decide how much effort will be required. What data must be collected in order to ensure that each feature is accurately described?

### How to assess?

- See how you can make good use of existing records.
- If possible, set up a record-keeping system that will give you the needed information without burdening the staff.

Quantitative data are always necessary, both for monitoring progress and for comparing the programme with others. They should be of immediate practical use, understandable to those in charge, easy to analyse and collected **according to the national data collection system**, if one exists.

### Basic points to consider:

- ✓ What will the data be used for?
- ✓ What is it necessary or useful to know?
- ✓ For whom are the data intended?
- ✓ Who will collect and analyse the data?
- ✓ How should the data be reported?
- ✓ Is any training required?
- ✓ Remember that exact census figures are often lacking.
- ✓ Statisticians and epidemiologists can provide useful advice.

Remember that it is better to have a few reliable figures than a great many figures that cannot be analysed.

Encourage staff not to underreport owing to misplaced feelings of guilt. Remind them that a high number of complications treated shows that women are coming to the facility and receiving care.

Concerning the data that must be collected for the indicators, in accordance with the national data collection system, if one exists, various tools can be used such as antenatal care registers or cards, immunization registers or cards, etc. The best solution will have to be found for each programme depending on what is available on the spot.

## Checklists

The purpose of checklists is to help determine training needs and the areas in which there is need for improvement. They must be practical to use and easy to analyse. A few examples are given in *annexes I.D to I.F, pages 55-63*. However, it is important to remember that any checklist will have to be adapted to the local situation.

## Indicators

The following monthly and annual indicators were chosen by the ICRC health unit in Geneva. They must be used for each programme, according to the local antenatal care package, (*see page 18*).

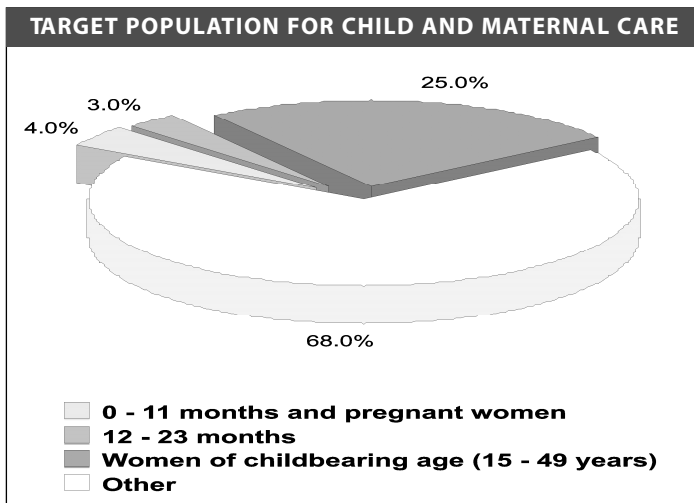
Given the conditions in which the ICRC works in the field, some bias<sup>4</sup> may be expected as a result of:

- unreliable census figures
- the definitions used
- the methods of calculation used, etc.

Other indicators may be used as well, since normally there are as many indicators as there are objectives, the number of which will depend both on the directives issued by the Ministry of Health and the level of antenatal care provided.

## Target population

Pregnant women<sup>5</sup> living in the health post catchment area: 4 % total population.



<sup>4</sup> Bias: a systematic distortion of a statistical result due to a factor not allowed for in its derivation.

<sup>5</sup> The number of pregnant women (and expected number of deliveries) within the year is approximately equal to the number of births (deliveries) within the year = birth rate (number of births /1000 people X population size in the catchment area). If the national birth rate is unknown, the number of pregnant women in a given population can be estimated at 4%.

## **Monthly indicators**

### **1. Total number of antenatal consultations**

Use:

- Provides information on the overall volume of activities and the workload of staff members.
- Provides a numerator for calculating the average number of antenatal consultations per woman.

Source: antenatal care register.

### **2. Number of new patients (number of first consultations)**

Definition: a new patient is any pregnant woman who consults the antenatal care service for the first time.

Use:

- Provides information on the use of the antenatal care service.
- Serves as a basis for calculating the antenatal care coverage rate (*see page 34*).
- Provides a denominator for other indicators such as the detected risk rate and the proportion of patients who consulted the antenatal care service during the third trimester.

Source: antenatal care register.

### **3. Number of third trimester consultations**

The third trimester is the best period for detecting risk pregnancies and deliveries.

Use:

- Provides information on the quality of the antenatal care service.
- Provides a numerator for calculating the average number of consultations per woman during the third trimester.

Source: antenatal care register.

### **4. Number of risk pregnancies detected**

Definition: according to national guidelines (*see next page*).

Use: provides information on the quality of the service and its ability to detect risk.

Source: antenatal care register.

### **5. Number of risk deliveries detected**

Definition: according to national guidelines (*see next page*).

Use: provides information on the quality of the service and its ability to detect risk.

Source: antenatal care register.

SAMPLE LIST OF RISK PREGNANCIES AND DELIVERIES	
Risk pregnancies	Risk deliveries
ACUTE MALARIA	ABNORMAL LIE
ANTEPARTUM HAEMORRHAGE	ANTEPARTUM HAEMORRHAGE
	BREECH
HYDRAMNIOS	HYDRAMNIOS
MULTIPLE PREGNANCIES	MULTIPLE PREGNANCIES
PLACENTA PRAEVIA (if diagnosis possible)	PLACENTA PRAEVIA (if diagnosis possible)
PRE-ECLAMPSIA	PRE-ECLAMPSIA AND ECLAMPSIA
PREMATURE CONTRACTIONS	PREVIOUS CAESAREAN
PREVIOUS STILLBIRTH	STILLBIRTH or FOETAL DEATH
PREVIOUS VESICO-VAGINAL or RECTO-VAGINAL FISTULA	PREVIOUS VESICO-VAGINAL or RECTO-VAGINAL FISTULA
	PREVIOUS PERINEAL TEARS DEGREE 3 (anal sphincter ruptured) or DEGREE 4 (degree 3 + rectal mucous ruptured)
	PREVIOUS OBSTRUCTED LABOUR
	PREVIOUS RETAINED PLACENTA
SEXUALLY TRANSMITTED DISEASES	SEXUALLY TRANSMITTED DISEASES
UNTREATED TUBERCULOSIS	
URINARY TRACT INFECTION	

This list will vary from country to country depending on the quality of medical care, the accessibility of health services and the existence of risks that are specific to certain countries (*e.g. female genital mutilation*). That is why it is important to attach the list drawn up for each antenatal care programme to the monitoring indicators.



***Monthly indicators*** (contd.)

**6. Number of patients who received five doses of tetanus toxoid before the first consultation**

Use:

- Indicates how well the Expanded Programme of Immunization (EPI) is functioning.
- Provides a numerator for calculating the overall immunization coverage of patients.

Source: immunization card / antenatal care register

**7. Number of patients who received at least a second dose of tetanus toxoid during pregnancy**

Use:

- Provides information for monitoring the EPI.
- Provides a numerator for calculating the percentage of women who were properly vaccinated.

Source: immunization card / antenatal care register / monthly EPI data report.

**8. Number of women referred to the second level of health care**

It can be useful to compare this indicator with the number of risk pregnancies/deliveries detected.

Source: antenatal care register

## **Annual indicators**

In order to compare the results year by year, use the national norms if possible. If not, use the international ones.

### **1. Coverage rate**

Definition: the coverage rate is the percentage of women in the total target population who consulted the antenatal care service at least once during pregnancy.

Method of calculation:

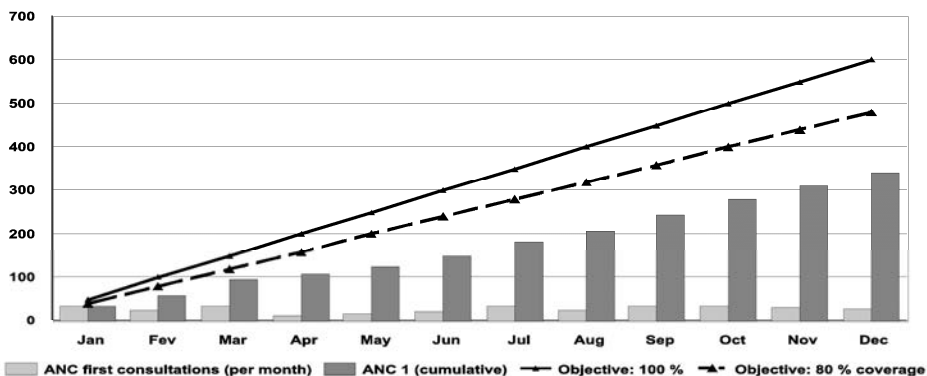
- ✓ Routine reporting system:
  - Number of new patients (first visits) during the year x 100
  - Divided by
  - Target population
- ✓ Population survey:
  - Number of women who consulted the antenatal care service at least once before the birth of their most recent child (0 – 23 months)
  - Divided by
  - Total number of women having delivered within the last two years

Use:

- Provides information on the accessibility of the service.
- Provides information on the use made of the service.

- ✓ A low coverage rate may indicate:
  - poor accessibility
  - poor acceptability
  - poor availability
  - a problem within the target population

**Objective: By the end of 2003, 80% of the pregnant women in YiroI will have had at least one ANC consultation.**



***Annual indicators*** (contd.)

**2. Average number of consultations per patient**

Objective: to ensure that all women have at least four consultations during pregnancy, as recommended by WHO.

Method of calculation:

- ✓ Routine reporting system
  - Total number of consultations during the year
  - Divided by
  - Total number of patients (= number of first consultations) during the year

Use: provides information on the use and quality of the service.

Source: routine reporting system - monthly data report.

**3. Proportion of patients who consulted the antenatal care service during the third trimester of pregnancy**

A significant proportion of risk pregnancies and deliveries are detected during the third trimester of pregnancy.

Method of calculation:

- Number of patients who consulted the antenatal care service at least once during the third trimester X 100
- Divided by
- Number of new patients (first consultations)

Source: routine reporting system / population survey.

**If the data needed to calculate this indicator are unavailable, the following indicator can be used as proxy:**

***Average number of third trimester consultations per patient***

Method of calculation:

- Total number of third trimester consultations during the year
- Divided by
- Number of new patients during the year

Source: routine reporting system - monthly data report.

**Annual indicators** (contd.)

**4. Effective tetanus immunization coverage rate among patients**

Objective: to ensure that all antenatal care patients and their newborn babies are effectively protected against tetanus.

Definition: patients effectively immunized until delivery are those who received five doses of tetanus toxoid before the first consultation or at least a second dose of tetanus toxoid during pregnancy.

Source: antenatal care register / immunization card.

It is important to find a means of indicating that a vaccination has been registered so as to ensure that it will not be counted more than once.

Method of calculation:

- Number of patients effectively immunized until delivery
- Divided by
- Number of new patients (first consultations).

**MONTHLY / ANNUAL DATA COLLECTION REPORT**

<b>A</b>	Total population (estimate)	
<b>B</b>	Target population = expected number of pregnant women	

Objective of the year	Calculation
Annual ANC coverage	E X 100 / B
Average number of consultations per patient	D / E
% of patients who consulted the ANC service during the third trimester	
Average number of third trimester consultations per patient	F / E
Effective tetanus immunization coverage	J+K / E

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>C</b>	Population												
<b>D</b>	Total number of antenatal consultations												
<b>E</b>	Number of new patients (number of first consultations)												
<b>F</b>	Number of third trimester consultations												
<b>G</b>	Number of risk pregnancies detected												
<b>H</b>	Number of risk deliveries detected												
<b>I</b>	Number of women referred to second level												
<b>J</b>	Number of patients who had already received five doses of tetanus toxoid before the first consultation												
<b>K</b>	Number of patients who received at least a second dose of tetanus toxoid during pregnancy												

# BASIC AND EMERGENCY EQUIPMENT

---

The equipment used will depend on the budget, the place where patients will be examined and the qualifications and abilities of national staff. Above all, it is essential to have a place that affords privacy so that the patients cannot be seen (screens can be installed if necessary) or overheard during examinations.

## **List of basic equipment for antenatal care**

- a table and two chairs
- a scale and a height gauge
- a table or bed for examining patients
- an obstetric wheel or calculator
- an unwindable meter
- a Pinard foetal stethoscope<sup>6</sup>
- a clock or watch with a second hand
- a sphygmomanometer with a stethoscope
- a thermometer
- urine test strips
- non-sterile-gloves
- lubricant gel
- soap and a container with tap if no clean running water is available

Drugs: *see annexes I.G.1-2, pages 64-65*

Patient records: *see pages 69-71*

## **Home delivery kits**

Depending on the situation, home delivery kits can be given to the traditional birth attendants or to the pregnant women themselves. Before distributing any equipment, it is important to consider:

- the capacities of those who will be using it (are instructions required before use?)
- the cost, especially when multiplied by the number of users
- the importance of not creating needs (it is always preferable to use local products if they are suitable)
- local conditions: cultural factors, weather conditions, availability or not of electricity and clean running water, etc.

## **Contents of a basic home delivery kit**

- soap
- razor blade
- umbilical tape
- non-sterile gloves
- iodine
- gauze
- cotton
- plastic sheet (one square meter, easy to clean)

---

<sup>6</sup> The ICRC has a list of battery-operated Doppler devices that can be used like Pinard stethoscopes for monitoring foetal heart rate. Before requesting one, think about who will be using it as such instruments are expensive and not easy to repair on the spot.

The quantities distributed will depend on the number of deliveries usually carried out by traditional birth attendants each month and on how often the items are received.

Traditional birth attendants whose work is being monitored can also be given a tube of tetracycline and various other items depending on needs: a torch, if batteries and bulbs are available locally; a jerrycan for water; a basin; nail clippers (may be preferable to a razor blade); and of course a bag or box, solid and easy to clean, where the material can be stored. For health professionals who perform house calls, a medical satchel will be needed, or, better still and less expensive, a solid lightweight plastic toolbox with spacious compartments.

### ***Emergency medical kit***

The following list of essential drugs and supplies is not exhaustive. The contents of an emergency medical kit will depend on the user's skills and the health services available. Some drugs and supplies will already be available in the primary health care centre.

***Drugs*** (see annexes I.G.1-2, pages 64-65)

Anaesthetic: Lidocaine/Lignocaine 2% (injectable)

Analgesic: Paracetamol (tablets)

Anticonvulsants:

- ✓ Diazepam (injectable)
- ✓ Magnesium sulfate (injectable) with antidote: calcium gluconate (injectable)

Antibiotics (injectable):

- ✓ Ampicillin
- ✓ Gentamicin
- ✓ Metronidazole
- ✓ Procaine benzyl penicillin
- ✓ Benzathine penicillin
- ✓ Benzyl penicillin (peni G, crystal peni)

Antimalarials:

- ✓ Sulfadoxine/pyrimethamine (tablets)
- ✓ Quinine dihydrochloride (injectable)

Intravenous solutions:

- ✓ Dextrose 5%
- ✓ Sodium chloride 0.9%
- ✓ Ringer's lactate
- ✓ Sterile water for injection

Oral rehydration salts

Oxytocics:

- ✓ Ergometrine/methylergometrine (injectable)
- ✓ Misoprostol (tablets)
- ✓ Oxytocin (injectable)

*(Ergometrine and oxytocin have to be stored in a refrigerator, which can be the same one as is used for vaccines. If there is no refrigerator, just put the necessary vials in the medical kit.)*

**Supplies**

- ✓ Ambu bags and masks for adults and infants
- ✓ Blood pressure cuff
- ✓ Cannulas, needles and syringes of different sizes
- ✓ Disinfectant solution: iodine povidone
- ✓ Gauze compresses, sterile and non-sterile
- ✓ Gloves, sterile and non-sterile
- ✓ Infusion sets and three-way taps with a 10-cm extension
- ✓ Kidney dishes (two)
- ✓ Mucus extractors for newborns
- ✓ Stethoscope for adults and foetal stethoscope (*Pinard or Doppler: see page 38, note 6*)
- ✓ Tape, adhesive
- ✓ Tourniquet
- ✓ Umbilical ligature/tape
- ✓ Urinary catheters (Foley with balloon, CH 14) and bags (2 L)
- ✓ Two pairs of scissors, two curved mosquito forceps and two Kocher or Crile forceps (stored in covered stainless steel containers)

**Remember** that the user is responsible for keeping the medical kit in order. It must be kept clean and complete; items that have reached their expiry date must be replaced and used needles must be disposed of in safety containers.



Health education is usually aimed at getting people to change their behaviour. However, it is important to remember that people are not necessarily interested in changing their behaviour and that they do not always agree to do so.

For many reasons (new scientific discoveries, financial considerations, national policies, etc.) the information given can change in the course of years, which means that it must be presented with due caution and humility. Moreover, it is all the more difficult to present such information convincingly when one comes from another culture. It is thus very important to ensure that experiences are shared in a climate of mutual trust and respect and that conclusions are drawn without judgement.

**Rather than focus on getting people to change their behaviour, the aim should therefore be to open a critical discussion aimed at examining problems and finding possible solutions together.** Remember that learning is not a one-way street: people can give as well as receive information and it is up to them to take decisions on issues that affect their lives.

### **When preparing a health education session, start by determining:**

- ✓ what the customs and beliefs of local people are
- ✓ where health care is placed on their scale of priorities among other issues such as food, shelter and security (health being understood here in the broadest sense of the term as meaning physical, psychological and social health)
- ✓ where antenatal care is placed on their scale of priorities among other health issues
- ✓ whether local people have the means to improve or change their behaviour if they want to
- ✓ who the target population should be
- ✓ what their school level is
- ✓ what the best period of the year and time of day would be for holding a health education session, taking such factors as weather conditions, agricultural or other work, walking distances, etc., into account
- ✓ where the session should be held
- ✓ what language local people speak
- ✓ which local staff members might be best able to lead the session
- ✓ whether local staff require training, and if so who should give it to them
- ✓ what material will be needed
- ✓ what the available budget is

The above information can be used to organize health education sessions in such a way as to:

- ✓ take the specific needs of the participants into account
- ✓ adapt the content of the session and the teaching tools used to the level of the participants
- ✓ give the participants the means to change their behaviour

When preparing a health education session, do not hesitate to ask colleagues or other partners with experience in this field for information or for help in finding appropriate teaching tools.

### **Training traditional birth attendants**

Since most traditional birth attendants are illiterate and have never received any proper training leading to a diploma, they are usually not recognized by the health system. However, they can provide a very useful link between pregnant women and the health services since they live in rural areas and have extensive practical experience working there. Whatever the status of traditional birth attendants may be, **it is important to comply with the national health policy regarding their use.**

Professionals who work with traditional birth attendants have a responsibility to train them, monitor their work and provide them with the materials needed for safe deliveries. At the same time, it is important to make sure that they do not engage in dangerous practices and that they understand their limits. Providing that they do, they can play a useful role in the referral system in case of complications.

In places where traditional birth attendants do not exist, it would be better not to create them, especially if there is no referral system. Instead, hold health education sessions on the topic of pregnancy for the women of the villages. It is necessary to work with whatever and whomever is found on the spot and to accept that changes will only come slowly.

### **Training sessions for traditional birth attendants**

Cultivation periods, weather conditions, security problems, walking distances and various other factors must be taken into account when deciding when and where traditional birth attendants should receive training.

The duration of the training will depend on the available budget and on whether trainees can eat and sleep on the spot. If they cannot, it might be necessary to hold several sessions. Delivery and post-partum care must of course be dealt with in any training given to traditional birth attendants, but here the focus will be on antenatal care.

#### Suggested topics:

- ✓ Hygiene
- ✓ Nutrition, anaemia
- ✓ Sexually transmitted diseases
- ✓ Tetanus immunization
- ✓ Malaria

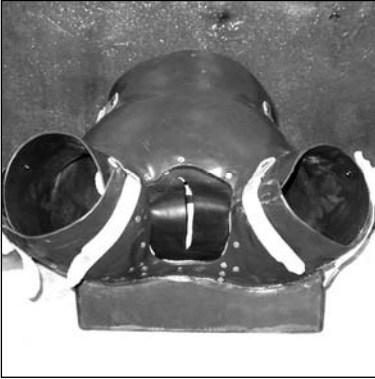
- ✓ Urinary tract infection
- ✓ Vaginal discharge
- ✓ Pre-eclampsia
- ✓ Vaginal bleeding and its different causes
- ✓ Premature contractions
- ✓ Premature rupture of membranes
- ✓ Loss of foetal movements
- ✓ Twins, malpresentations
- ✓ Any other local health problems that need to be discussed

With the exception of beginners, all traditional birth attendants already have some knowledge of these topics and it is important to build on it. Start by finding out what they know. Remember that the aim is not to turn traditional birth attendants into professionals, but to give them enough knowledge to be able to detect problems and refer cases in time. **Since they will not be able to remember everything they are told, priority messages must be selected for each topic and duly emphasized.**

Teaching tips:

- ✓ As most traditional birth attendants can neither read nor write, it is essential to take a very practical and visual approach.
- ✓ Ask the trainees to explain what they do and why they do it so as to find out what they already know.
- ✓ If possible, use an interpreter who is already familiar with the topic.
- ✓ Trainees must be given enough time to learn from one other and share experiences.
- ✓ Do not hesitate to repeat the same message in different ways so as to be sure that it is understood.
- ✓ Local culture and beliefs must be respected. Remember that trainers can also learn from trainees.
- ✓ When giving information, it is important to explain why you are giving it and to keep things as simple as possible.
- ✓ Make trainees understand how important they are for their community by emphasizing their knowledge and skills.
- ✓ Although this is a touchy issue, it is essential to make sure that everyone recognizes his limits and knows when to ask for help.
- ✓ Taking time to observe the trainees carefully and being patient with them are important aspects of good teaching.
- ✓ Alternate speakers so as to avoid monotony, using teams that already exist (e.g. ICRC hygiene promotion teams) whenever possible.
- ✓ Participatory dynamics can be very effective, especially if the trainers are acquainted with different methods.

Since traditional birth attendants have been delivering babies for centuries, it will take time for them to understand why they have to acquire new skills, learn to recognize risk pregnancies or deliveries and refer pregnant women to the appropriate services.



***Example of teaching tool that can be made in the field: model built with material used for orthopaedic prosthesis (polypropylene)***



## **Health education for pregnant women**

When discussing health issues with pregnant women, it is essential to make sure that they can understand what is being said to them. With this in mind, it is important to:

- ✓ use a good interpreter if one is necessary (preferably a person who is familiar with the subject)
- ✓ adapt one's explanations to the women's level of understanding
- ✓ use teaching tools such as drawings, pictures or dolls whenever necessary (such tools can be made if they are unavailable)
- ✓ choose the most appropriate information to give to each woman, taking her specific situation into account
- ✓ give the women time to ask questions and express any fears they might have.

Sometimes a pregnant women will only come for one antenatal consultation during her pregnancy. In such cases it is better to focus on the essential, bearing her particular situation in mind (culture, available health services, security conditions, local health problems, etc.) than to burden her with too much information.

Often the best solution is to hold meetings with several women at the same time so as to benefit from the dynamics of group communication. Given the great number of subjects that will need to be discussed, however, this will take more time. Many meetings will usually be required and in addition it will be necessary to repeat things and ask questions to make sure that everyone has understood.

For various reasons, some women will not be able to attend such meetings. In such cases, it may be possible to go to the villages and hold health education sessions on the spot, both for the women and – if the culture allows – for their husbands, who often have a lot to do with the decisions taken.

It would be impossible to provide an exhaustive list of all the topics that may need to be discussed with a pregnant woman. However, a number of antenatal problems are dealt with in the second and third parts of these guidelines, each section of which contains a paragraph that explains what to say. Obviously, other topics (post-partum care, general health, etc.) may be discussed as well.



# **ANNEXES PART I**

Antenatal Care Programmes

Source: *Addressing the Needs of Women Affected by Armed Conflict. An ICRC Guidance Document. Annex to the Guidance Document. General and Specific Protection of Women under International Humanitarian Law* (see bibliography)

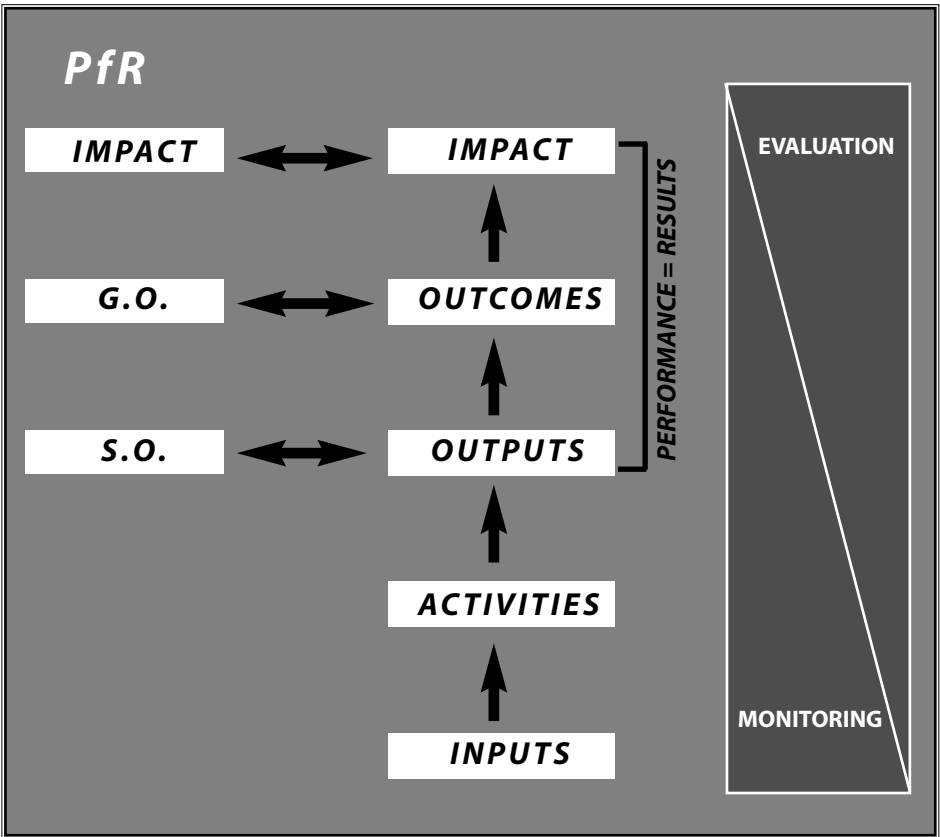
## Health

GC IV, Art. 91	Every place of internment must have an adequate infirmary. Isolation wards must be set aside for cases of contagious or mental diseases. <b>Maternity cases</b> and internees suffering from contagious diseases, or whose condition requires special treatment, surgical procedures or hospital care, must be admitted to an institution where adequate treatment can be given, and must receive care not inferior to that provided for the general population.
GC IV, Art. 16	The wounded and sick, as well as the infirm and <b>expectant mothers</b> , must be the object of particular protection and respect.
GC IV, Art. 17	Belligerents must endeavour to conclude agreements for the removal from besieged or encircled areas of the wounded, sick, infirm, elderly, children and <b>maternity cases</b> , and for the passage of medical personnel and equipment to such areas.
GC IV, Art. 18	Civilian hospitals organized to provide care for the wounded and sick, the infirm and <b>maternity cases</b> shall be protected from attack.
GC IV, Art. 50	In situations of occupation, the Occupying Power may not hinder the application of any preferential measures with regard to food, medical care and protection against the effects of war which may have been adopted prior to the occupation in favour of children under fifteen, <b>expectant mothers</b> and mothers of children under seven years of age.
AP1, Art. 8(a)	The definition of wounded and sick expressly includes <b>maternity cases</b> , newborn babies and other persons who may be in immediate need of assistance or care, such as <b>expectant mothers</b> , and who refrain from any act of hostility.
AP1, Art. 70(1)	In the distribution of relief consignments, including medical items, priority should be given to children, <b>expectant mothers, maternity cases</b> and nursing mothers.

GC: Geneva Convention

AP: Additional Protocol





**Desired impact:** The desired impact is the statement of **the long-term result** expected. When this result is reached, humanitarian work, protection and assistance provided by international humanitarian actors, should be diminished or cease. This does not mean that all needs are definitely covered nor all problems are solved, but that the people and the local authorities and institutions are again **self-reliant** and able to **cope** with their daily life and to **sustain** the necessary basic social infrastructure.

«GO» | Three elements defining the General Objective:

**Status:** General Objectives have a range of validity of «one to several years». They represent the mid-term «outcome».

**Formulation of GO:** In this section it is requested to formulate **the outcome or mid-term result** according to what might reasonably be achieved in a time period from one to several years. The formulation must be as «**SMART**» as possible.

**Institutional strategy:** This section exists only in headquarters PfR databases. The General Objectives can be linked to an institutional strategy.

«**SMART**» **criteria** | General Objectives as well as Specific Objectives must be formulated as much as possible according to the SMART criteria outlined below:

**Specific:** the objective/result is distinct from others and is as precisely defined as possible;

**Measurable:** the objective/result mentions quantitative and qualitative elements concerning beneficiaries and the protection and assistance services offered;

**Achievable:** the objective/result must be realistically attainable. It is not a hypothetical result nor an objective/result out of scope compared to what the ICRC is able to implement at its best;

**Relevant:** the objective/result is appropriate and makes sense in relation with the target group and the problem assessed;

**Time-bound:** any time element that indicates the necessary time for its implementation and situates the projected validity of the objective.

«**SO**» | Specific Objectives linked to the «GO»:

There number is not limited.

Specific Objectives specify the **short-term or output** results within the year.

**GLOSSARY OF TERMS**

**Impact:** An examination of the wider long-term effects that the action contributes to - social, economic, technical, environmental - individuals, communities, and institutions. Impact can be immediate and long-range, intended and unintended; positive and negative, macro and micro. Impact studies address the question what real difference has the action made in improving the capacity of communities to reduce their level of vulnerability? How many people have been affected, and how have they benefited from the action?

**Input:** Organizational, human information, or physical/material, financial resources invested directly or indirectly to achieve results in favour of intended beneficiaries.

**Outcome:** At the general objective level, these are the effects over the mid-term (one to several years). These intermediate benefits are generated over time and are directly linked to the accumulated achievement of programme outputs.

**Output:** Short-term, tangible results of ICRC actions or programme inputs achieved within a 12-month period.

**Performance:** The extent to which a programme, project, or operation is implemented in an effective, efficient and timely manner and produces expected results for an identified target population without causing unintended negative consequences.

**Result:** A describable and/or measurable change in state, planned and unplanned, at the output, outcome, impact level, that can be attributed to ICRC action.

To help improve and/or maintain the health of the target population <sup>7</sup>

IMPACT		Verifiable objectives	Indicators	Source of verification / Remarks
<b>GENERAL OBJECTIVE</b>	<p><b>To improve the coverage and use of the ANC service for the target population</b></p> <p>Coverage measures the proportion of the target population that has received a particular service</p> <p>Use reflects the demand for services</p>	<p>Increase from xx to xx the % of pregnant women receiving antenatal care</p>	<p>ANC coverage rate</p>	<p><b>Source 1:</b> Population survey            Numerator (N) = Number of women who consulted the ANC service at least once before the birth of their most recent child 0-23 months            Denominator (D) = Number of women having delivered within the last 2 years</p> <p><b>Source 2:</b> Routine reporting system            N = Total number of first consultations during the year            D = Expected number of pregnant women in the health post (HP) catchment area</p>
		<p>Increase from xx to xx the % of mothers who consult the ANC service at least 4 times</p>	<p>Utilization rate of antenatal service</p>	<p><b>Source 1:</b> Population survey            N = Number of mothers who said they had consulted the ANC service at least 4 times before the birth of their most recent child 0-23 months            D = Number of women having delivered within the last 2 years</p> <p><b>Source 2:</b> Routine reporting system → average number of ANC per pregnant women            N = Number of consultations during specified period            D = Number of first consultations during specified period</p>
		<p>Increase from xx to xx the % of women who consult the ANC service at least once during the third trimester of pregnancy</p>	<p>Utilization rate of ANC service during the third trimester of pregnancy</p>	<p><b>Source 1:</b> Population survey            N = Number of mothers who said they had consulted the ANC service at least once during the last trimester of pregnancy before the birth of their most recent child 0-23 months            D = Number of women having delivered within the last 2 years</p> <p><b>Source 2:</b> Routine reporting system            N = Number of consultations during the third trimester            D = total number of first consultations during the third trimester</p>

<sup>7</sup> Pregnant women = 4% total population      Childbearing women (15-49 years) = 20% total population

		Verifiable objectives	Indicators	Source of verification / Remarks
<b>SPECIFIC OBJECTIVE 1</b>	<p><b>To improve the target population's access to the ANC service</b></p> <ol style="list-style-type: none"> <li>1) Geographical accessibility measures the extent to which services are accessible to the target population</li> <li>2) Financial accessibility measures the extent to which people are able to pay for care</li> <li>3) Cultural accessibility measures the extent to which access to health services is impeded by cultural taboos (e.g. reproductive health services use male physicians, ethnic minority services use staff from the dominant ethnic group)</li> <li>4) Security</li> </ol> <p><b>How?</b> By ensuring the availability of first-line health services able to provide the minimum package in accordance with national standards concerning infrastructure, equipment, medicines, medical skills and reference materials.</p>	<p>Increase from xx to xx the number of facilities providing the key components of the minimum package</p> <p>Increase from xx to xx the % of the target population that has physical access to the health services</p>	<p>Number of health posts supported by the ICRC providing ANC (minimum or maximum package to be defined)</p> <p>Number of pregnant women per health service as compared with national / WHO standards</p> <p>Distribution of health services in catchment area</p> <p>ANC coverage</p>	<p>See: General Objective</p>

**ANNEX I.C.3 SAMPLE ANC SERVICE INDICATORS**

<b>SPECIFIC OBJECTIVE</b>	<b>To improve the quality of the ANC service</b>	<b>Verifiable objectives</b>	<b>Indicators</b>	<b>Source of verification / Remarks</b>
<p><b>2</b></p>	<p><b>How?</b> By ensuring that:</p> <ul style="list-style-type: none"> <li>- Infrastructure and equipment are maintained according to ICRC / national standards</li> <li>- The ANC service has an uninterrupted supply of renewable high-quality materials, vaccines and drugs</li> <li>- Medical and non-medical staff have the skills required to manage patients</li> <li>- The ANC service, through continuous monitoring and evaluation, meets the needs of the population</li> </ul>	<p>Increase from xx to xx the number of health posts providing ANC according to national standards</p> <p>Increase from xx to xx the % of cases of major local diseases (to be defined) that are detected and properly treated</p> <p>Increase from xx to xx % patients who can obtain all the medications prescribed (including vaccines)</p> <p>Increase the knowledge pregnant women have of health topics (to be defined)</p>	<p>Number of health services conforming to national standards concerning infrastructure, equipment, medicines and supplies, medical skills and reference materials</p> <p>Number of trained health providers managing health services properly (according to national standards)</p> <p>% of patients managed properly (according to national standards)</p> <p>Satisfaction of the target population with the services provided</p> <p>Population's knowledge of health topics</p> <p>Number of health facilities reporting they had not run out of antibiotics / anti-malarial drugs, vaccines, needles, syringes and/or immunization cards for more than one week during the 3 previous months (or last period)</p> <p>Percent of patients who were unable to obtain all the medicines prescribed in the health unit owing to shortages</p> <p>Number of EPI sessions that encountered shortages</p>	<p>Reference materials: standard treatment guidelines, list of essential drugs, national EPI guidelines</p> <p>Form for evaluating the work of health providers</p> <p>For example: quality of diagnosis and treatment</p> <ul style="list-style-type: none"> <li>- % of high-risk pregnancies/deliveries correctly diagnosed</li> <li>- % of undetected high-risk pregnancies/deliveries</li> </ul> <p>- Quality of nursing care: % of patients presenting post-injection complications</p>

***In Emergency Phase:***

- ✓ Provision of delivery kits: UNICEF midwifery kits for health centres and clean delivery kits for home use
- ✓ Identification of referral system for obstetric emergencies
  - One health centre for every 30,000 - 40,000 people
  - One operating theatre and staff for every 150,000 - 200,000 people
  - Skilled health care providers trained and functioning ( one midwife for 20,000 - 30,000 people, one CHW/TBA for 2,000 - 3,000 people)
  - Community beliefs and practices relating to delivery are known
  - Refugee women are aware of service availability

***Antenatal Services are in place:***

- ✓ Record systems in place (clinic and home-base maternal records)
- ✓ Maternal health assessment routinely conducted
- ✓ Complications detected and managed
- ✓ Clinical signs observed and recorded
- ✓ Maternal nutrition maintained
- ✓ Syphilis screening in pregnancy undertaken routinely
- ✓ Educational activity related to antenatal care provision in place
- ✓ Preventive medication given during antenatal services:  
iron folate for anaemia, Vitamin A, tetanus toxoid, others as indicated (malaria)
- ✓ STD prevention and management undertaken
- ✓ Materials available to implement antenatal care services

***Delivery services are in place:***

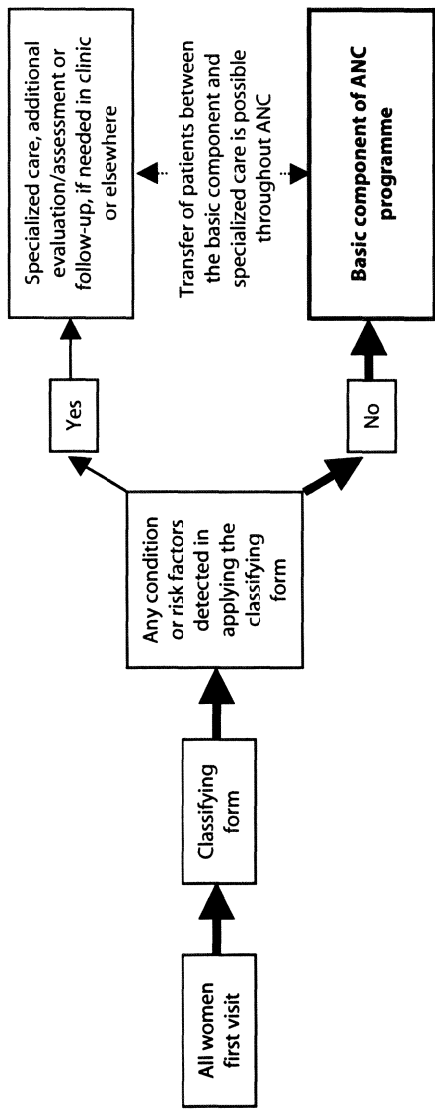
- ✓ Protocols for managing and referring complications in place and transport system functioning
- ✓ Training and supervision of TBAs and midwives undertaken
- ✓ Complications are detected and managed appropriately
- ✓ Awareness of warning signs of complications in pregnancy is widespread
- ✓ Standard protocols are used to manage deliveries
- ✓ Medical facilities are adequately equipped
- ✓ Breastfeeding is supported

***Postpartum services are in place:***

- ✓ Educational activities undertaken (especially family planning and breast feeding)
- ✓ Complications managed appropriately
- ✓ Iron folate and Vitamin A provided
- ✓ Newborn weighed and referred for under-five services (e.g., EPI, growth monitoring)

---

This annex comes from: "*Reproductive Health in refugees situations an Inter-agency Field Manual*", UNHCR, 1999.





### CRITERIA FOR CLASSIFYING WOMEN FOR THE BASIC COMPONENT

Name of patient: \_\_\_\_\_ Clinic record number: 

--	--	--	--	--	--	--	--

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_

**INSTRUCTIONS:** Answer all of the following questions by placing a cross mark in the corresponding box.

#### OBSTETRIC HISTORY

- |   | No                       | Yes                      |
|---|--------------------------|--------------------------|
| 1. Previous stillbirth or neonatal loss?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. History of 3 or more consecutive spontaneous abortions?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Birthweight of last baby < 2500g?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Birthweight of last baby > 4500g?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Last pregnancy: hospital admission for hypertension or pre-eclampsia/eclampsia?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Previous surgery on reproductive tract?<br>(Myomectomy, removal of septum, cone biopsy, classical CS, cervical cerclage) | <input type="checkbox"/> | <input type="checkbox"/> |

#### CURRENT PREGNANCY

- |   | No                       | Yes                      |
|---|--------------------------|--------------------------|
| 7. Diagnosed or suspected multiple pregnancy?                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Age less than 16 years?                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Age more than 40 years?                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Isoimmunization Rh (-) in current or in previous pregnancy? | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Vaginal bleeding?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Pelvic mass?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Diastolic blood pressure 90mm Hg or more at booking?        | <input type="checkbox"/> | <input type="checkbox"/> |

#### GENERAL MEDICAL

- |   | No                       | Yes                      |
|---|--------------------------|--------------------------|
| 14. Insulin-dependent diabetes mellitus?                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Renal disease?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Cardiac disease?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Known 'substance' abuse (including heavy alcohol drinking)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Any other severe medical disease or condition?              | <input type="checkbox"/> | <input type="checkbox"/> |

Please specify \_\_\_\_\_

\_\_\_\_\_

A "Yes" to any ONE of the above questions (i.e. ONE shaded box marked with a cross) means that the woman is not eligible for the basic component of the new antenatal care model.

Is the woman eligible? \_\_\_\_\_ (circle) **NO** **YES**

If NO, she is referred to \_\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_ Signature \_\_\_\_\_  
(staff responsible for ANC)

## BASIC COMPONENT CHECKLIST

Note: Mark the activities carried out as appropriate (unshaded boxes). (Use the closest gestational age at the time of visit.)

Name of patient \_\_\_\_\_ Address & telephone No. \_\_\_\_\_

Clinic record No. \_\_\_\_\_

**FIRST VISIT** for all women at first contact with clinics, regardless of gestational age. If first visit later than recommended, carry out all activities up to that time

Visits			
1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<12 wks			

DATE: / /

Classifying form which indicates eligibility for the basic component of the programme				
Clinical examination				
Clinically severe anaemia? Hb test				
Ob. exam: gestational age estimation, uterine height				
Gyn. exam (can be postponed until second visit)				
Blood pressure taken				
Maternal weight / height				
Rapid syphilis test performed, detection of symptomatic STIs				
Urine test (multiple dipstick) performed				
Blood type and Rh requested				
Tetanus toxoid given				
Fe / Folic acid supplementation provided				
Recommendation for emergencies / hotline for emergencies				
Complete antenatal card				

**SECOND VISIT** and SUBSEQUENT VISITS

Gestational age - approx. # of weeks			
DATE: / /	26wks	32wks	38wks

Clinical examination for anaemia				
Ob. exam: gestational age estimation, uterine height, fetal heart rate				
Blood pressure taken				
Maternal weight (only women with low weight at first visit)				
Urine test for protein (only nulliparous women / women with previous pre-eclampsia)				
Fe / Folic acid supplementation given				
Recommendation for emergencies				
Complete antenatal card				

**THIRD VISIT:** add to second visit

DATE: / /

Haemoglobin test requested				
Tetanus toxoid (second dose)				
Instructions for delivery/plan for birth				
Recommendations for lactation / contraception				

**FOURTH VISIT:** add to second and third visits

DATE: / /

Detection of breech presentation and referral for external cephalic version				
Complete ANC card, recommend that it be brought to hospital				

Staff responsible for antenatal care: Name \_\_\_\_\_

Signature \_\_\_\_\_

This checklist is intended for use in supervision and monitoring of antenatal services provided by health workers, community-based health workers, and traditional birth attendants. The list is comprehensive and includes some clinical tasks that the traditional birth attendants and other peripheral workers do not routinely carry out. The checklist should be modified and simplified according to the local situation. This checklist is intended for use in the observation of service delivery. It is recommended that you review the checklist carefully before using it to be sure that you understand the questions and know how to use the form. For observation of service delivery, mark "yes" if the service provider carries out these activities during service delivery. For interview questions, mark "yes" if the respondent answers correctly.

1. Health facility \_\_\_\_\_ 3. Date \_\_\_\_\_  
 2. Service provider \_\_\_\_\_ 4. Observer/supervisor \_\_\_\_\_

### Reproductive history

Did the service provider:

5. YES NO Review obstetric record or family health card?

Did the service provider update information on the following:

6. YES NO Age?  
 7. YES NO Date of last menstrual period?  
 8. YES NO Date of last delivery?  
 9. YES NO Number of previous pregnancies?  
 10. YES NO Outcome of each pregnancy?  
 11. YES NO Complications during previous pregnancies?<sup>8</sup>  
 12. YES NO Current or past breast-feeding?

Did the service provider ask about risk factors:

13. YES NO Spotting/bleeding during current or past pregnancies?  
 14. YES NO Burning on urination?  
 15. YES NO Foul smelling vaginal discharge?  
 16. YES NO Diabetes?  
 17. YES NO Cardiovascular problems?  
 18. YES NO Renal problems?  
 19. YES NO Female circumcision?  
 20. YES NO Previous injuries, especially to pelvis?  
 21. YES NO Medications currently being taken?  
 22. YES NO Smoking?  
 23. YES NO Alcoholism?  
 24. YES NO Drug abuse?  
 25. YES NO Any other problems associated with current pregnancy?

Ask about preventive actions taken:

26. YES NO Immunization against tetanus?  
 27. YES NO Malaria prophylaxis?  
 28. YES NO Plans for delivery?

<sup>8</sup> Complications include bleeding, toxæmia, infection, prolonged labour, RH incompatibility, Caesarean section, stillbirth, and spontaneous abortion.

**Physical exam**

Did the service provider:

29. YES NO Take pulse?  
 30. YES NO Take blood pressure?  
 31. YES NO Correctly measure height and weight?  
 32. YES NO Correctly examine legs, face, and hands for signs of oedema?  
 33. YES NO Calculate expected date of delivery?  
 34. YES NO Assess adequacy of pelvic outlet?

**Routine preventive services for pregnant women**

Did the service provider:

35. YES NO Immunize or arrange for immunization against tetanus?  
 36. YES NO Administer or prescribe iron supplements?  
 37. YES NO Administer or prescribe nutrition supplements?  
 38. YES NO Administer or prescribe anti-malarial drugs if indicated?

**Referral**

Did the service provider:

39. YES NO Encourage mother to attend prenatal sessions at the local health facility?  
 40. YES NO Refer high-risk pregnancies for additional medical attention?<sup>9</sup>  
 41. YES NO Recommend hospital birth for high-risk pregnancies?  
 42. YES NO Refer for urine examination (sugar and protein) if medically indicated?  
 43. YES NO Refer for blood test (glucose, haemoglobin/haematocrit or malaria diagnosis) if medically indicated?  
 44. YES NO Refer for blood test for RH factor determination?  
 45. YES NO Refer for syphilis serology test (per local norms or if medically indicated)?

---

<sup>9</sup> Referral is indicated if: 1) one or more high-risk factors (see reproductive history) are present; 2) there is a history of complications during pregnancy or birth; 3) the woman is older (per local norms) or has had many pregnancies (number determined by local norms). Referral is also indicated for obstetric and medical problem(s) and emergencies, ectopic pregnancy, infection or bleeding from abortion, and other prenatal problems and emergencies, especially haemorrhage, sepsis and eclampsia. Guidelines for referral should follow local norms.

### Counselling

Did the service provider:

46. YES NO Explain the importance of continuing prenatal care during pregnancy?
47. YES NO Explain the benefits of weight gain during pregnancy?
48. YES NO Discuss the types of foods to include in diet during pregnancy?
49. YES NO Explain how to take iron tablets/nutrition supplements?
50. YES NO Warn about dangers of alcohol, smoking, drugs?
51. YES NO Explain the importance of tetanus toxoid immunization during pregnancy?
52. YES NO Explain the importance of having delivery attended by a trained health worker?
53. YES NO Explain the dangers of abortions performed by unqualified individuals?
54. YES NO Explain danger signs which require immediate attention?<sup>10</sup>
55. YES NO Tell pregnant woman to have family seek assistance or transport her to clinic/hospital if danger signs of obstetric emergencies or complications of labour occur?
56. YES NO Tell pregnant woman where and when to go for next prenatal visit?
57. YES NO Verify that pregnant woman understood key messages?
58. YES NO Ask if she has any questions?

### Supplies

Ask the service provider about the following supplies:

59. YES NO Do you have a working scale (to weigh the pregnant woman)?
60. YES NO Do you have a measuring tape?
61. YES NO Do you have a stethoscope and blood pressure cuff?
62. YES NO Do you have a watch with a second hand to take pulse?
63. YES NO Do you have tetanus toxoid vaccine?
64. YES NO Do you have iron tablets (per local policy)?
65. YES NO Do you have drugs for malaria prophylaxis (per local policy)?
66. YES NO Do you have forms or health cards to record the antenatal visit?

<sup>10</sup> Danger signs include swelling of hands and face, severe or prolonged dizziness, bleeding from vagina, sharp or constant abdominal pain, fever, vaginal odour or discharge.

**Interview with pregnant woman**

Mark “yes” if the respondent answers correctly:

67. YES NO Do you plan to have a trained health worker attend your birth?  
68. YES NO What are the danger signs during pregnancy that require medical attention?  
69. YES NO When and where is your next prenatal visit?

If pregnant woman is at high-risk for any reason:

70. YES NO Do you plan to seek further medical attention?  
71. YES NO Do you plan to have your baby at a hospital?

**Interview with service provider**

Mark “yes” if the respondent answers correctly:

72. YES NO What are the danger signs during pregnancy that require medical attention?  
73. YES NO Do you refer high-risk pregnancies?  
74. YES NO Do you have a way of tracking high-risk pregnancies?  
75. YES NO Do you follow up pregnant women who do not return to prenatal sessions?

This checklist is intended for rapid assessment of service quality in the observation of service delivery of antenatal care. To use the checklist, mark "yes" if the service provider carries out the task during service delivery. For interviews, mark "yes" if the respondent answers correctly. If you would like to assess this service in more detail, please refer to the appropriate service quality checklist. The checklist item numbers below correspond to that list.

1. Health facility \_\_\_\_\_
3. Observer/supervisor \_\_\_\_\_
4. Date \_\_\_\_\_

**Did the service provider:**

- |        |     |    |  |
|--------|-----|----|--|
| 5.     | YES | NO | Review and update obstetric record or family health card?                              |
| 6-12.  | YES | NO | Ask at least two questions about reproductive history risk factors?                    |
| 13-25. | YES | NO | Ask at least two questions about risk factors associated with this pregnancy?          |
| 29-34. | YES | NO | Perform at least 1 physical exam activity?   |
| 35.    | YES | NO | Immunize or arrange for immunization against tetanus?                                  |
| 43.    | YES | NO | Do a blood test (glucose, haemoglobin/haematocrit and malaria) if medically indicated? |
| 52.    | YES | NO | Discuss the importance of having the delivery attended by a trained health worker?     |
| 54.    | Yes | No | Explain danger signs which require immediate attention?                                |
| 56.    | Yes | No | Tell pregnant woman when and where to go for next prenatal visit?                      |

This annex "Antenatal Care Quality Service Assessment" comes from:

Aga Khan Foundation, *Primary Health Care Management Advancement Programme, Assessing the Quality of Service*, Module 6, User's Guide, Aga Khan Foundation, Thailand, 1997.

ORAL	
Albendazole 400 mg	DORAALBE 4T
Amoxicillin 250mg	DORAAMOX 2T
Cefixime 200mg	DORACEFI 2T
Erythromycin 250mg	DORAERY 2T
Ferrous sulfate 200mg + folic acid 0,4mg <sup>11</sup>	DORAFERF 20T
Fluconazole 50mg	DORAFLUC 5T
Mebendazole 100mg	DORAMEBE 1T
Methyldopa 250mg	DORAMETY 2T
Metronidazole 250mg	DORAMETN 25T
Misoprostol 200mcg = 200µg (for emergency medical kit)	DORAMISO 2T
Multivitamins <sup>12</sup>	DORAMULT 1T
Oral rehydration salts, sachet 27,9g/1 litre	DORAORSA 1S
Paracetamol 500mg	DORAPARA 5T
Sulfadoxine 500mg + pyrimethamine 25mg	DORASULP 5T
Nevirapine 200mg	DORANEVI 2T
EXTERNAL	
Nystatin 100 000 IU (intra-vaginal)	DEXTNYST 1T
INFUSION (for emergency medical kit)	
Dextrose 5%, 500 ml	DINFDEXT 505
Ringer Lactate, 1 litre	DINFRINL 1
Sodium Chloride 0,9%, 500 ml	DINFSODC 905B

<sup>11</sup>200mg of ferrous sulfate corresponds to 60mg of ferrous which is in line with WHO recommendations.

<sup>12</sup> Composition: Retinol: 2500 IU, Thiamine B1: 1mg, Riboflavine B2: 0,5mg, Nicotinamide B3: 7,5mg, Vitamin C: 15mg, Colecalciferol D3: 300 IU



**INJECTABLE** (for emergency medical kit)

Ampicillin, 1g, powder vial	DINJAMPI 1V
Calcium Gluconate, 100mg/ml, 10ml, amp.	DINJCALG 1A
Ceftriaxone, 250mg, powder vial	DINJCEFT 2V
Diazepam, 5mg/ml, 2ml, amp.	DINJDIAZ 1A
Ergometrine / methylethergometrine, 0,2mg/ml, 1ml, amp.	DINJERGM 2A
Gentamicin, 40mg/ml, 2ml, amp.	DINJGENT 8A
Hydralazine, 20mg, powder amp.	DINJHYDA 2A
Lidocaine / Lignocaine 2%, 20ml, vial	DINJLIDO 2V2
Magnesium sulfate, 0,5g/ml, 10ml, vial	DINJMAGS 5V
Metronidazole (infusion) 5mg/ml, 100ml	DINFMETN 501
Oxytocin, 10 IU/ml, 1ml, amp.	DINJOXYT 1A
Penicillin Benzyl 1 MIU + Procaine 3 MIU, powder vial	DINJPENIF 4V
Penicillin Benzathine, 2,4 MIU, powder vial	DINJPENIB 2V
Penicillin Benzyl (peni G, crystal peni), 1 MIU, powder vial	DINJPENIG 1V
Quinine di-hydrochloride, 300mg/ml, 2ml, amp.	DINJQUIN 6A
Sterile water for injection, 10ml, plastic amp.	DINJWATE 1A

*For more information on the content of the emergency medical kit, see pages 39-40*



# 2 Antenatal Consultations



*Of all the rights of women,  
the greatest is to be a mother. Lin Yutang*

# 2 ANTENATAL CONSULTATIONS

## ***Part II : Antenatal consultations***

### ***Medical records***

### ***Diagnosis of pregnancy and Calculation of term***

### ***Physiological changes in pregnancy***

### ***Initial medical assessment***

### ***Standard antenatal consultation***

### ***Cases to be referred for delivery***

### ***Emergency obstetric care***

#### *General information*

#### *Emotional and psychological support*

#### *Management of emergency cases:*

- Convulsions or loss of consciousness  
(schedules for magnesium sulfate and diazepam enclosed)
- Fever
- Respiratory distress
- Vaginal bleeding
- Abdominal pain
- Prolapsed cord
- Unsatisfactory progress in labour
- Trauma

### ***Annexes***

***II.A.1-5*** *Controlled cord traction with illustrations of placental delivery*

***II.B*** *Guidelines for rehydration*

To ensure proper follow-up of the pregnant woman, **it is useful to have a file recording basic information, both medical and other.** With a well-organized filing system, pertinent information can be obtained on previous pregnancies. Here again, certain adjustments are necessary.

### **The records must :**

- ✓ be in the local language
- ✓ be adapted to the professional abilities of the local staff and to their writing skills (capital letters, etc.)
- ✓ be well-spaced, easy to use, and printed on stiff paper that remains in good condition
- ✓ be affordable
- ✓ focus on specific antenatal information
- ✓ cover the entire duration of the pregnancy, which may mean recording a number of consultations

As for the filing of obstetric records, it is important to find a system which suits the professionals using them and which makes it easy to find a specific file on the basis of information given by the patient (name, village, number, etc.).

Depending on the situation, the best method might be to send the woman home with the file, especially if she has the opportunity to attend different health facilities. In other cases, however, this would not be a good idea because the file might be lost or damaged, or the woman might forget to bring it with her at the next visit.

*This is not because she does not have a responsible attitude; it may be because the antenatal file is not the most important concern among the many other worries of the family concerned, or because the family's living conditions do not allow her to keep the file in good condition.*

**If the woman has to be referred,** it is advisable to have a standard referral letter in which you just have to fill in the spaces.

*Please, see the illustrations, « Examples of obstetric records » on next pages.*



« AN EXAMPLE OF OBSTETRIC RECORDS »

**\*** (see note)

**NAME:**

**AGE:**

**VILLAGE:**

**HEIGHT:**

**WEIGHT:**

**GRAVIDA:**

**PARA:**

**ABORTION:**

**PREMATURE:**

**STILLBIRTH:**

**PREVIOUS DELIVERIES:** (place, year, sex, weight, episiotomy, caesarean, time of breast-feeding ...)

**MEDICAL AND/OR SURGICAL HISTORY:**

**HISTORY OF ACTUAL PREGNANCY - DATE OF LAST MENSTRUATION:**

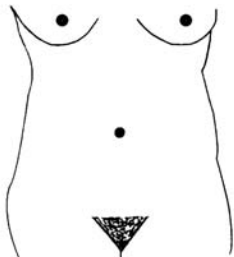
**DATE:**

**MONTHS:**

**WEIGHT:**

**B P:**

**FINDINGS AND/OR COMPLAINTS:**



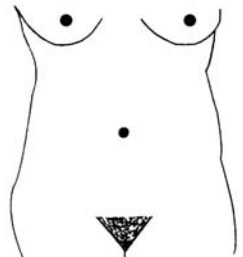
**DATE:**

**MONTHS:**

**WEIGHT:**

**B P:**

**FINDINGS AND/OR COMPLAINTS:**



\* *Inscription for : name or village or number, etc... your method for «filing system».*

« ANOTHER EXAMPLE OF OBSTETRIC RECORDS »									
	•	••	•••	••••	•••••	••••••	•••••••	••••••••	•••••••••

# DIAGNOSIS OF PREGNANCY AND CALCULATION OF TERM

**Pregnancy is diagnosed on** the basis of the symptoms, the date of the last menstrual period and the clinical signs.

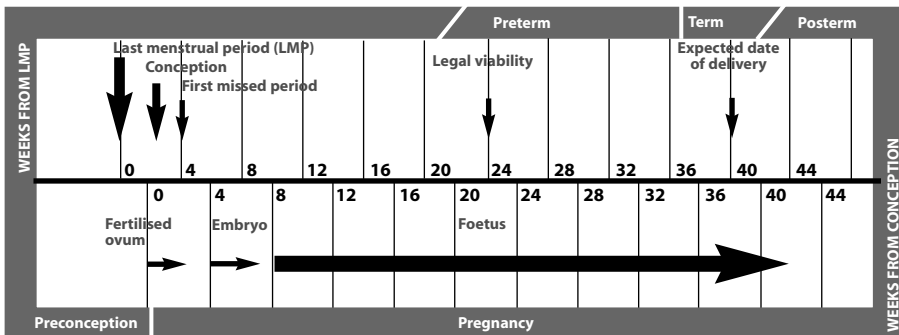
## Possible symptoms of pregnancy

- ✓ Amenorrhoea (but there can be some spotting)
- ✓ Tense and sensitive breasts
- ✓ Nausea
- ✓ Sleepiness
- ✓ Pollakiuria

## Last menstrual period: LMP

If the woman knows the date of the first day of her last menstrual period, the number of weeks of pregnancy and the **expected date of delivery (EDD)** can be calculated.

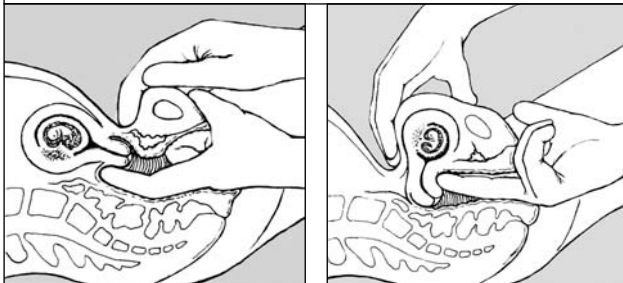
## Menstrual age, conceptional age and prenatal events



## Clinical signs

At a certain stage, pregnancy is obvious and easy to confirm by abdominal palpation.

**If necessary, check for Hegar's sign (with an empty bladder)**





## Diagnosing pregnancy

- ✓ If the woman has regular periods, presents secondary amenorrhoea, knows the exact date of the LMP and shows the symptoms listed above, it is easy to make a diagnosis of pregnancy.
- ✓ If the woman does not have regular periods, does not know the date of the LMP and has some chronologically abnormal bleeding, it is more difficult to be sure about the diagnosis, especially if she has no clear symptoms.

### Note

Always check first for pregnancy in case of abnormal bleeding or amenorrhoea.

## Pregnancy test

The urine test should be performed only if there is a need to know the result as quickly as possible (*in case of rape, before treatment contraindicated during pregnancy, ectopic or molar pregnancy, etc.*). Usually, however, it is not necessary and the clinical evolution will confirm the pregnancy. (*For the test to be reliable, the instructions must be followed scrupulously.*)

## Different methods of calculating EDD

If the date of the first day of the LMP is unknown, the calculation will be approximate.

**The easiest way of calculating the EDD is by using an obstetric wheel or calculator.**

Otherwise, choose the most appropriate method of calculation from the following examples (*bearing in mind that none of them is exact, but that delivery at term takes place between 37 and 42 weeks of pregnancy*):

- ✓ LMP + 40 weeks = EDD
- ✓ LMP – 3 months = X + 1 year = EDD
- ✓ LMP + 7 days = X + 9 months = EDD
- ✓ LMP + 10 days = X – 3 months = EDD
- ✓ LMP + 280 days = EDD  
or 10 months of 28 days (lunar cycle)

*In some countries women are used to calculating according to the moon. This corresponds to the last method listed above, the moon having a cycle of 28 days. Thus if the woman has regular periods, when she has missed the first period she has already gone through one cycle of 28 days. She will look at the moon and count nine more cycles of the same phase of the moon to know approximately when she will deliver.*

# PHYSIOLOGICAL CHANGES IN PREGNANCY

The physical and psychological changes that occur in a pregnant woman are often due to the effects of specific hormones :

human chorionic gonadotrophin, oestrogen, progesterone, human placental lactogen.

## Cardiovascular and haematological changes

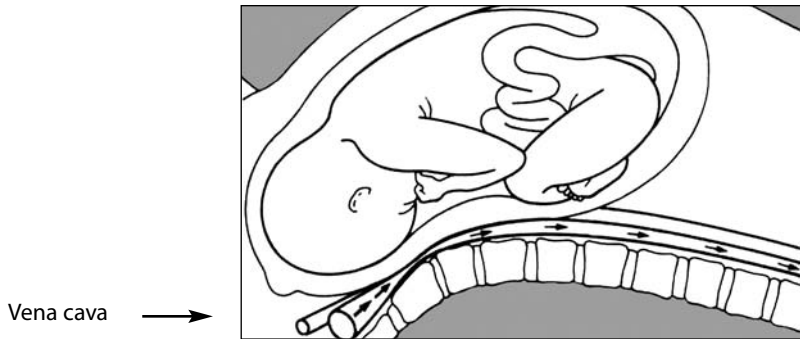
FINDINGS (FOR INFORMATION)	OUTSIDE PREGNANCY	PREGNANCY AT TERM
Blood volume (mL)	4000	5500
Plasma volume (mL)	2600	3800
Corpuscular volume (mL)	1400	1700
Venous haematocrit (%)	35	30
Haemoglobin (g/L)	115 - 150	100 - 125
Leucocytes ( $\times 10^9/L$ )	6 - 8	10 - 15
Platelets ( $\times 10^9/L$ )	150 - 300	115 - 300
Fibrinogen (g/L)	2 - 4	4 - 6,5
Serum iron (mol/L)	13 - 27	11 - 21
Cardiac flow (L/min)	4.8	8.7
Cardiac rate (b/min)	60 - 100	+15%
Uterine flow (ml/min)	85	500

The consequences of these changes during pregnancy are as follows :

- ✓ **Haemodilution**, leading to physiological anaemia compensated by an increase in red cell mass in response to the extra oxygen requirements of maternal and placental tissue.
- ✓ **Increased cardiac output** :
  - leading to heart enlargement
  - leading to an increase in ejection volume
  - but offset by reduced peripheral resistance (*arterial walls relax and dilate, capacity of veins and venules may increase by a litre*).
- ✓ **The excess blood flow**, directed mainly to the uterus, goes to the placenta.
- ✓ **Changes in clotting factors** increase clotting capacity during pregnancy, resulting in greater risk of thrombosis or embolism. In the event of complications, disseminated intravascular coagulation or clotting failure may occur, with a high risk of maternal death if no appropriate treatment is available.

### **Blood pressure** (see page 92)

In advanced pregnancy women should avoid lying on their back, as this can cause deep hypotension because of the pressure of the gravid uterus on the vena cava. As a result, cardiac output is reduced and there may be feelings of faintness and paresthesia of the fingers, and even a risk of maternal shock which will precipitate changes in the foetal heart rate.



### **Oedema** (see page 92)

The combination of a higher level of proteins and haemodilution during pregnancy leads to a decrease in osmotic pressure and moderate oedema of the lower limbs. This is considered to be physiological and the prognosis is favourable.

### **Respiratory system**

Changes are necessary in order to maximize maternal oxygen intake and ensure efficient carbon dioxide excretion for the mother and hence for the foetus.

#### **These changes are as follows:**

- ✓ The respiratory rate (<20/min) does not change, but the tidal volume increases by approximately 40%.
- ✓ Oxygen consumption increases by 20% during pregnancy.
- ✓ In later pregnancy, the ribs spread in order to compensate for the effect of pressure of the enlarged uterus on the diaphragm, and thus to maintain the capacity of the thoracic cavity.

*There is often nasal congestion due to increased vascularization during pregnancy, and nosebleeds are common.*

## Gastrointestinal system

### MOUTH

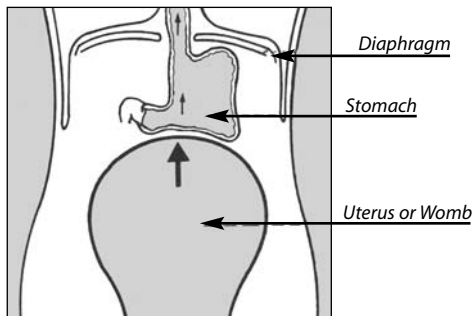
- ✓ Owing to a hygroscopic effect, gums may become spongy and there may be some bleeding. Dental problems that occur may be due to gingivitis rather than to dental caries.
- ✓ There may be an increase in salivation (ptyalism).
- ✓ Women often experience changes in their sense of taste, leading to dietary changes or even food cravings (*"pica": craving for non-food substances such as coal or earth, is rare.*)

### OESOPHAGUS

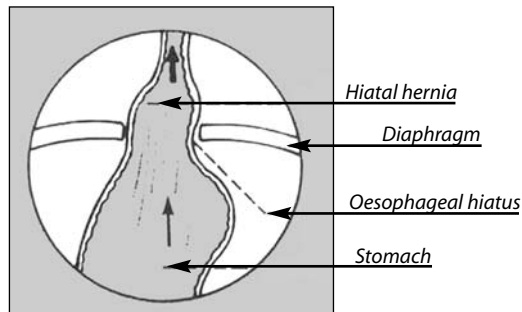
- ✓ Heartburn is common and associated with gastric reflux (*60% of pregnancies*) due to relaxation of the lower sphincter.
- **Advise the mother to:**
  - divide meals into smaller separate portions
  - avoid spicy, fatty or acid foods, alcohol, coffee, fizzy drinks, etc.
  - raise the head of the bed

The raised abdominal pressure at the end of pregnancy favours heartburn and sliding hiatal hernia.

**Heartburn**  
(ie: Oesophageal reflux)



**Hiatal hernia**



### **STOMACH**

- ✓ Gastric emptying and peristalsis are slowed in order to maximize absorption of nutrients, and acidity is reduced.
- ✓ Nausea and vomiting occur in 50% of pregnancies, mainly during the first trimester. This can be more severe in cases of multiple pregnancy or hydatiform mole.

- **Advise the mother to :**

- divide meals into separate small portions throughout the day
- avoid food which is difficult to digest or irritates the stomach

**Complication :** *hyperemesis gravidarum (1-2% of pregnancies), which means severe vomiting associated with dehydration, loss of weight and electrolytic disturbances that can lead to icterus or renal failure, refer the pregnant woman.*

### **SMALL BOWEL**

Increased absorption of calcium and iron.

### **LARGE BOWEL**

Increased absorption of water.

- ✓ Constipation is the result of sluggish gut motility.
- **Advise the mother to :**
    - drink at least 2 litres per day
    - eat fibre-rich foods, fresh or dry vegetables and fruits.
  - ✓ Haemorrhoids, which may occur as a result of relaxation of the smooth muscles of the vein wall, can be exacerbated by constipation.

## **Urinary system**

During pregnancy, pollakiuria occurs as bladder capacity is restricted by the growth of the uterus. On average, the urinary flow increases by 25%.

### Renal blood flow :

- 500 mL/min in normal conditions
- 700-800 mL/min during pregnancy

### Glomerular filtration :

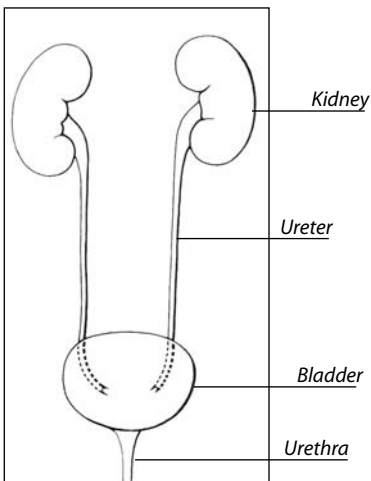
- 100 -130 mL/min in normal conditions
- 150 mL/min during pregnancy

Owing to hormonal action, there is dilatation of the renal cavities and ureters. This leads to urinary stasis which, together with compression of the ureters by the gravid uterus, increases the risk of infection.

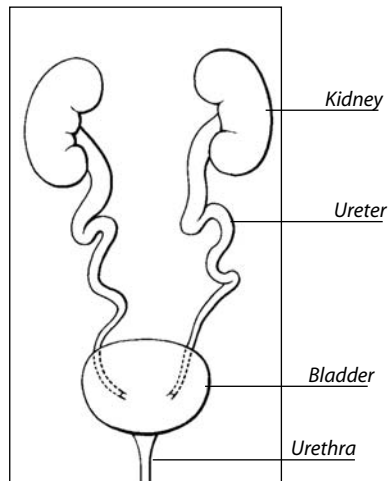
- **Advise the mother to:**

- drink at least 2 litres per day
- pass urine frequently.

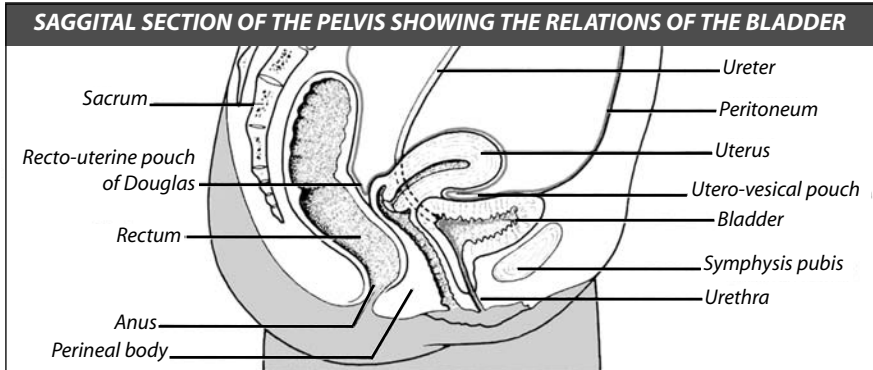
As a result of increased glomerular filtration in the prone position, urine output is greater at night.



**The renal tract**



**Dilated, kinked ureters in pregnancy**



### **Skin changes**

Increased activity of the melanin-stimulating hormone causes deeper pigmentation during pregnancy.

Chloasma: patchy colouring on the face, resembling a mask.

Linea nigra: pigmented line running from the pubis to the umbilicus. The nipples and perineal area also become darker.

Striae gravidarum or stretch marks: red streaks on breasts, abdomen, and areas with fat deposits such as the thighs during pregnancy, fading to residual white streaks about 6 months after delivery.

Increased blood supply to the skin causes sweating, and women often feel hot during pregnancy.

### **Skeletal changes**

Relaxation of ligaments and muscles occurs in pregnancy, with maximum effect during the last weeks.

This relaxation enables the pelvis to increase its capacity so as to facilitate the descent of the foetus at term and during labour.

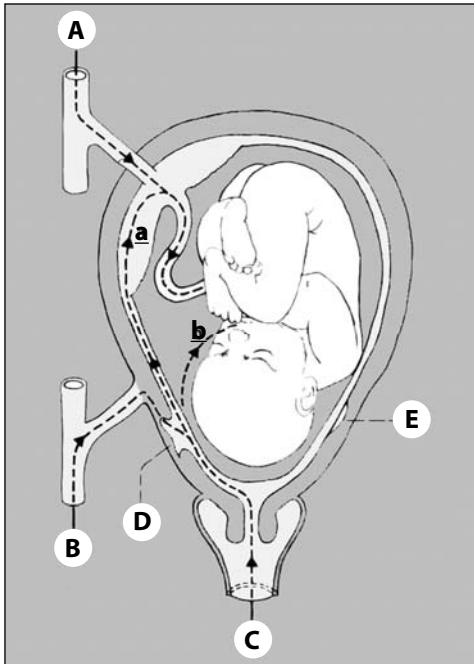
The symphysis pubis softens, as do the sacroiliac joints. The sacrococcygeal joint loosens, allowing the coccyx to be displaced backwards.

This can cause pain in the joints and pelvic ligaments.

## Immune system

Systematic maternal immunodepression during pregnancy has not been confirmed, but many studies suggest it may occur.

### How infection in the mother can affect the foetus :



#### Possible means of foetal infection during pregnancy:

- Direct transplacental infection by blood **A**
- Secondary endometritis site **D**, transmitted by blood **B** or by ascending (eg. vagina) infection **C**

#### From this site **D**, the infection can spread:

- ✓ to the placenta and reach the foetus by way of the umbilical cord **a**
- ✓ to the amniotic fluid **b** which can infect the foetus by digestive or respiratory way

**E**: Endometritis site remained quiescent during pregnancy.



## **Uterus**

### **Uterus sizes**

**Before pregnancy:** size of a fresh fig

**At two months:** size of an orange

**At one month:** size of a tangerine

**At three months:** size of a grapefruit, and the fundus (*upper part*) of the uterus may be palpated above the symphysis pubis.

### Braxton-Hicks contractions:

These begin at two months and can be felt by the mother at four; they are painless and sporadic. They continue throughout pregnancy, becoming more intense and painful at the later stage, and eventually lead to labour contractions.

At 36 weeks the uterus reaches the level of the xiphisternum. Softening of the pelvic floor tissues together with good uterine tone and the formation of the lower uterine segment encourages the foetus to sink into the lower pole of the uterus. This is described as “lightening”:

- ✓ In the primigravida, this process also encourages the beginning of a gradual descent into the pelvis (*uterine height decreases*), and the foetal head becomes engaged.
- ✓ In the multiparous woman, descent often occurs only when labour starts.

## **Cervix**

The cervix acts as an effective barrier against infection and also retains the pregnancy.

The thickened mucus secreted by the endocervical cells forms a cervical plug called the operculum, which provides protection from ascending infection.

Cervical vascularity increases during pregnancy and the cervix becomes softer.

## Summary of foetal development

### 0 - 4 weeks after conception

- Rapid growth
- Formation of the embryonic plate
- Primitive central nervous system forms
- Heart develops and begins to beat
- Limb buds form

### 4 - 8 weeks

- Very rapid cell division
- Head and facial features develop
- All major organs laid down in primitive form
- External genitalia present but sex not distinguishable
- Early movements
- Visible on ultrasound from 6 weeks

### 8 - 12 weeks

- Eyelids fuse
- Kidneys begin to function and the foetus passes urine from 10 weeks
- Fetal circulation functioning properly
- Sucking and swallowing begin
- Sex apparent
- Moves freely (*not felt by mother*)
- Some primitive reflexes present

### 12 - 16 weeks

- Rapid skeletal development – visible on X-ray
- Meconium present in gut
- Lanugo appears
- Nasal septum and palate fuse

### 16 - 20 weeks

- «Quickening» – mother feels fetal movements
- Fetal heart heard on auscultation
- Vernix caseosa appears
- Fingernails can be seen
- Skin cells begin to be renewed

### 20 - 24 weeks

- Most organs become capable of functioning
- Periods of sleep and activity
- Responds to sound
- Skin red and wrinkled

### 24 - 28 weeks

- Survival may be expected if born
- Eyelids reopen
- Respiratory movements

### 28 - 32 weeks

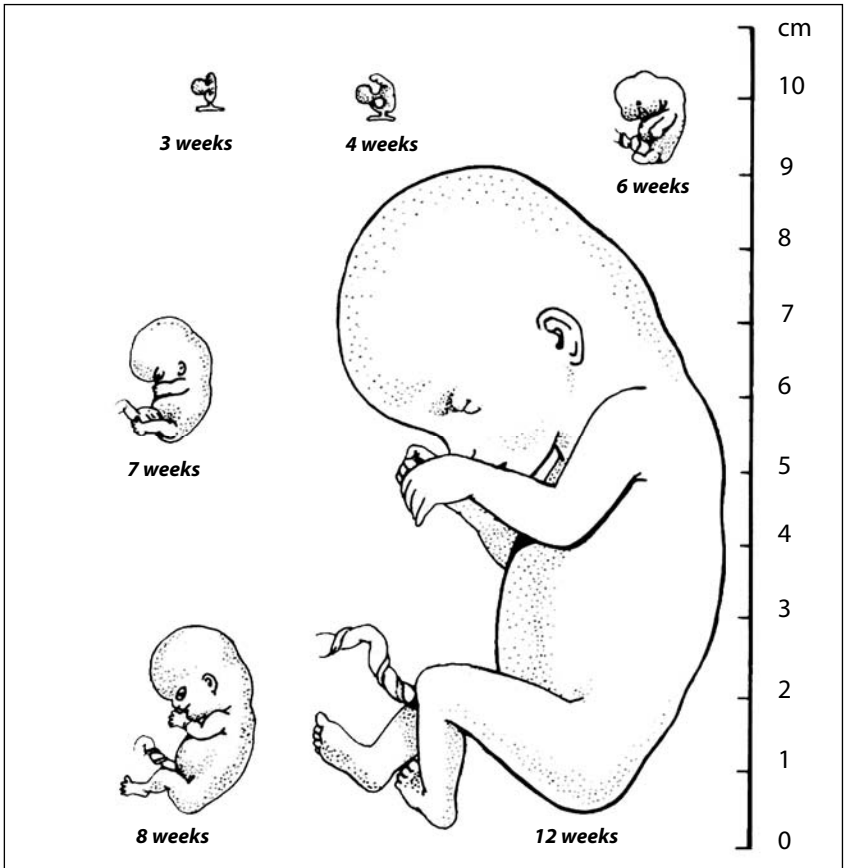
- Begins to store fat and iron
- Testes descend into scrotum
- Lanugo disappears from face
- Skin becomes paler and less wrinkled

### 32 - 36 weeks

- Increased fat makes the body more rounded
- Lanugo disappears from body
- Head hair lengthens
- Nails reach tips of fingers
- Ear cartilage soft
- Plantar creases visible

### 36 - 40 weeks after conception (38-42 weeks after LMP)

- Term is reached and birth is due
- Contours rounded
- Skull firm



**Sizes of embryos and fetus between 3 and 12 weeks gestation**

## **Vagina**

Vascularity of the vagina increases during pregnancy.

The muscle layer hypertrophies, and changes in the surrounding connective tissue make the vagina more elastic. These changes enable it to dilate during the second stage of labour so as to accommodate the descending foetus.

There is marked desquamation of the superficial epithelial cells, which increases the amount of normal white vaginal discharge called leucorrhoea.

The epithelial cells also have increased glycogen content, which interacts with Döderlein's bacillus, a normal commensal of the vagina, to produce a more acid environment. This provides an extra degree of protection against some organisms, but unfortunately causes increased susceptibility to others, such as *Candida albicans*.

## **Breast changes in chronological order**

### **3 - 4 weeks**

Prickling, tingling sensation due to increased blood supply particularly around nipple.

### **6 weeks**

Developing ducts and glands cause the breasts to be enlarged, painful and tender particularly in women who normally experience pre-menstrual changes.

### **8 weeks**

Bluish surface veins are visible.

### **8 - 12 weeks**

Montgomery's tubercles become more prominent on the areola.

These sebaceous glands secrete sebum which keeps the nipple soft and supple.

The pigmented area around the nipple darkens and may enlarge slightly.

This area is known as the primary areola.

### **16 weeks**

Colostrum can be expressed.

Further extension of the pigmented area occurs and is often mottled in appearance, *secondary areola*.

### **Late pregnancy**

Colostrum may leak from the breasts; progesterone causes the nipple to become more prominent and mobile.

## ***Psychological changes***

Although for most women pregnancy is a time of great joy and satisfaction, as they have fulfilled a biological function, many experience a period of anxiety.

Decisions have to be made about the future, and motherhood has to be accepted as a new status.

A loving, supportive relationship in which the two partners communicate and discuss their feelings will help resolve these early anxieties.

Mood swings are common because of hormonal changes, and can often be frightening for both partners.

Libido is likely to decrease, not only because of changes in the body but also because of fear of harming the baby.

It must be borne in mind that this is a time when a woman requires a great deal of support and sensitivity.

The mother often feels a unique and exclusive closeness with the foetus. Her partner may feel left out, as he is unable to share this experience.

She also becomes increasingly aware of her new responsibilities and realizes that she will lose some of her freedom.

Much depends on the circumstances:

- ✓ whether the woman is primigravida or multiparous
- ✓ her cultural, social and economic situation
- ✓ whether the pregnancy was desired or otherwise
- ✓ whether there are major security problems where she lives.

Even women without any psychiatric history may suffer from specific conditions such as depression during pregnancy, or depression or psychosis during the post-partum period. This has nothing to do with what is called «baby blues», which is a very common and less serious problem.

# INITIAL MEDICAL ASSESSMENT

---

This section focuses on the general state of health of the pregnant woman.

More specific details of the antenatal check-up will be given in the following section « *Standard antenatal consultation* ».

**It is important to keep in mind that, depending on the local medical services, it may not be possible to treat all the health problems encountered.**

Laboratory tests and other procedures such as ultrasound examinations and complicated surgery will in most cases be unavailable or very expensive to organize.

## THUS FOCUS ON CLINICAL FINDINGS

First check the general appearance of the pregnant woman:

- Is she able to walk properly or does she need assistance?
- Is she alert or apathetic?
- Does she present signs of malnutrition or skin lesions?

More detailed examination of functions or organs:

- Evaluation of breathing and heartbeat
- Screening for:
  - ✓ anaemia
  - ✓ icterus
  - ✓ oedema
  - ✓ female genital mutilation
  - ✓ fever
  - ✓ sexually transmitted diseases
  - ✓ any other disease, such as: goitre, malaria or tuberculosis ...

# STANDARD ANTENATAL CONSULTATION

## **When, and how many times, is a pregnant woman supposed to attend an antenatal consultation ?**

### **WHO recommendations are as follows:**

- ✓ The first consultation during the first trimester, or before 12 weeks
- ✓ The second around 26 weeks or 6-7 months
- ✓ The third around 32 weeks or 7-8 months
- ✓ The fourth around 38 weeks or 8-9 months

Such recommendations concern only physiological pregnancies without complications or risk of complications requiring closer and more specific attention.

In conflict situations, lack of security or accessibility and other problems often make it difficult or impossible for pregnant women to keep to such a schedule.

### **What are the priorities ?**

- As most maternal deaths occur around the time of delivery, the most important consultation is the one that takes place during the last month of pregnancy, as it allows screening of cases to be referred to hospital for delivery.

This does not mean, however, that the previous consultations are not important; they are also useful for detecting and preventing the complications outlined below.

- Health education activities focusing on antenatal care should be carried out at every opportunity and pregnant women should be encouraged to take part (*see pages 41-45*).

It should be borne in mind that pregnant women will attend antenatal consultations only if they themselves are convinced that this is in their interest to do so.

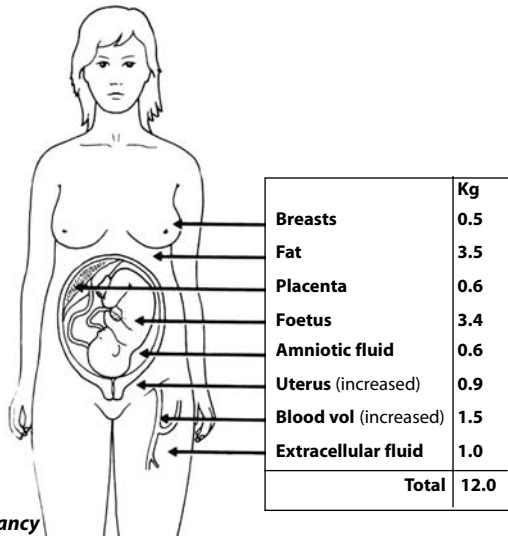
## What has to be checked at each antenatal consultation, whatever the stage of pregnancy ?

### Body weight

- ✓ Taken together with height, this provides an indication of the mother's nutritional status.
- ✓ This assessment makes basic follow-up possible : vomiting, diarrhoea or reduced food intake may decrease body weight, whereas oedema, water retention or hydramnios may increase it.

During pregnancy there is an increase in basic metabolism, more specifically of carbohydrates, as the main source of energy for the foetus is glucose.

**Needs in terms of calories are in the order of 2500 cal/day.**



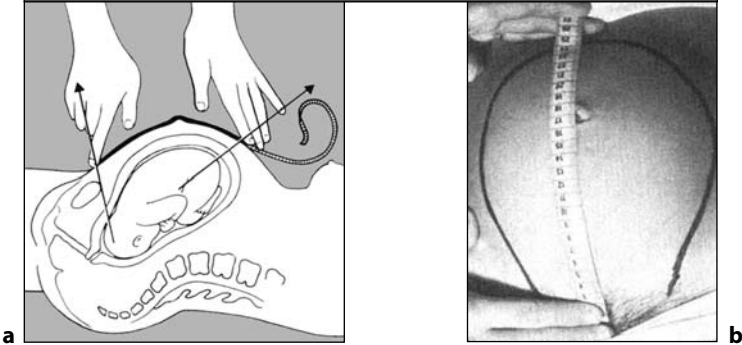
***Distribution of weight gain in pregnancy***

### **Uterine height** (during second and third trimester)

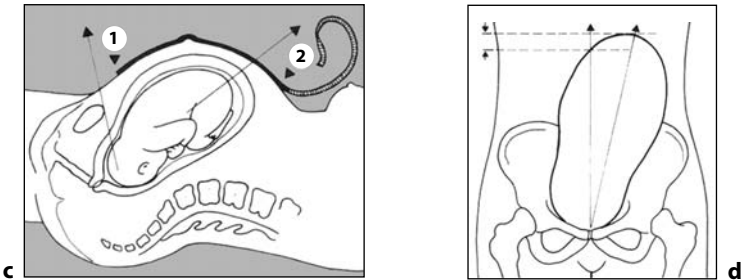
- ✓ Uterine height will depend on the size of the foetus, which varies according to the ethnic origin of the parents, the mother's diet and other factors.
- ✓ It will also vary according to foetal lie (longitudinal, oblique or transverse, **see figure d**, next page).
- ✓ This is useful only if several consultations take place to monitor progress (foetal growth retardation, screening for foeto-pelvic disproportion, twins, hydramnios, etc.).



**HOW TO MEASURE THE UTERINE HEIGHT**



**a and b. Using a measuring tape**

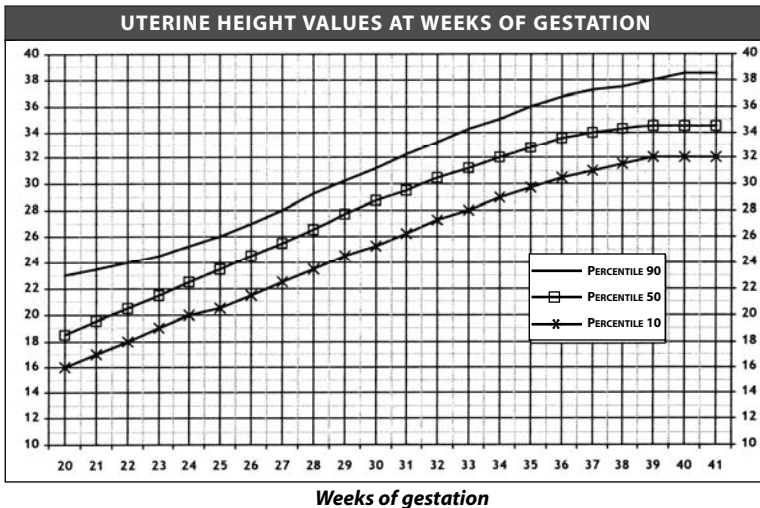


**Two mistakes not to be made**

1. The end of the tape is not on the symphysis
2. The measure is taken beyond the uterine fundus

**A difference can exist depending on the way of measuring :**

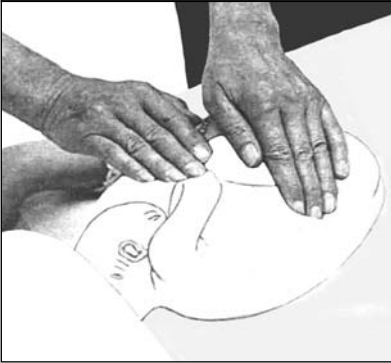
- Uterine axis or
- Umbilical -symphysis axis



**Palpation** (during second and third trimester)

- ✓ This makes it possible to detect multiple pregnancies.
- ✓ It also indicates the presentation of the foetus, so as to:
  - facilitate foetal auscultation by localization of the foetal chest
  - refer the mother to hospital for delivery in case of malpresentation  
*(remember that foetal presentation can change up to the last month)*
- ✓ It allows assessment of:
  - foetal weight
  - the amount of amniotic fluid
  - uterine contractions

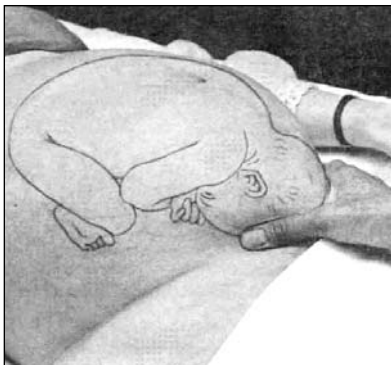
P A L P A T I O N S



*Walking the finger tips across the abdomen to locate the position of the foetal back.*



*Pelvic palpation. If the hands are in the correct position, the outstretched thumbs will meet at about umbilical level. The fingers are directed inwards and downwards.*



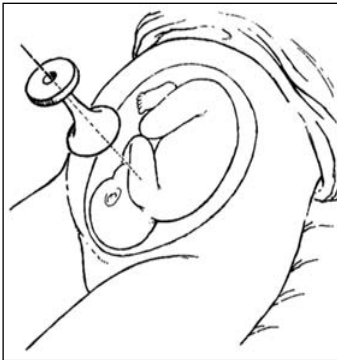
*Pawlik's manoeuvre. The lower pole of the uterus is grasped with the right hand, the midwife facing the woman's head.*



*Method of pelvic palpation used to determine a position in a vertex presentation. The higher cephalic prominence (the cincipital) will be on the side opposite to the back.*

## Auscultation of the foetal heart

- ✓ This is possible from 20 weeks or 5 months of pregnancy using an obstetric stethoscope such as the Pinard stethoscope (*a sort of ear trumpet, see below*).
- ✓ Normal rate : between 120 and 160 beats per minute, but not regular; there is a baseline rate specific to each foetus with some accelerations in between.  
Abnormal rate : decelerations, bradycardia or tachycardia occur more often during labour or delivery, so are not dealt with in this work.
- ✓ The aims of auscultation are:
  - to check that the foetus is alive
  - to confirm foetal presentation
  - to check the foetal cardiac rhythm in order to detect any distress.
- ✓ Auscultation can be difficult to perform because of:
  - uterine contractions
  - a large amount of amniotic fluid
  - a thick layer of abdominal subcutaneous fat
  - extensive foetal movement
  - pulsations of the maternal aorta (*to distinguish between the foetus and the mother, compare the pulse on the mother's wrist with foetal auscultation*)
  - pulsations of the umbilical cord (*funicular souffle*), which is more a murmur than a beat.



*Looking at the second hand of a watch permits to count the foetal heartbeats.*

*Auscultation of the foetal heart.*

## **Vital signs of the mother**

### **Blood pressure: normal <140/90 mmHg**

When taking the mother's blood pressure, avoid placing her in a position that causes compression of the vena cava (*see page 75*). This means that the mother should be in a semi-seated position, especially in the last months of pregnancy, and not in left lateral decubitus, as this can give an erroneously good result.

The procedure makes it possible to screen for hypertension and pre-eclampsia.

### **Pulse: normal between 60 and 100 beats per minute.**

A higher rate may be due to anaemia, haemorrhage, fever, anxiety or other conditions.

### **Temperature:**

Should be taken if relevant symptoms and signs observed (*suspicion of infection being the main reason*).

## **Urine test strips**

To be used when indicated by symptoms or by complaints from the mother, in order to check for proteinuria (in case of hypertensive disorders) or urine infection (presence of leucocytes and/or nitrites) and as a diagnostic aid.

Note that if the urine is contaminated with blood, infected vaginal secretions or amniotic fluid, proteinuria may test positive. The same applies to examination for urine infection: when infected vaginal secretions are present in the urine, the test for leucocytes may be positive.

## **Oedema** (*see page 75*)

If oedema is observed in the lower extremities, hands or face, this indicates an increase in plasma volume and/or poor blood circulation. Oedema associated with high blood pressure and proteinuria indicates pre-eclampsia, (*see pages 148-151*).

## **Procedures for:**

### **First-trimester consultation**

- ✓ If possible, confirm the pregnancy and calculate the term.
- ✓ Take action and give advice in accordance with the findings, the mother's complaints and medical history, and local community health problems.
- ✓ Check tetanus vaccination status.
- ✓ Give prophylaxis for anaemia (*see page 139*).
- ✓ Set a date for the next appointment, making it clear that the mother should attend at once should any problem arise in the meantime.
- ✓ Answer any questions.

### **Second-trimester consultation**

- ✓ Same procedure as for the first-trimester consultation, adapted to the mother's situation.
- ✓ Give prophylaxis for malaria if in an endemic zone (*see pages 143-146*).

### **Third-trimester consultation**

- ✓ Same procedure as for the first-trimester consultation, adapted to the mother's situation.
- ✓ Give prophylaxis for malaria if in an endemic zone.
- ✓ Give mebendazole 500mg or albendazole 400mg to every pregnant woman once in 6 months (do not give it in the first trimester).
- ✓ Determine whether the mother will have to deliver in hospital and give appropriate advice.

## **Comments concerning health services**

The quality of a health service depends on:

- the qualifications of staff
- their professional experience and skills
- the technical resources available

*These guidelines are intended for nurses, midwives and doctors dispensing antenatal care.*

### **Note**

*Not everyone has the expertise needed to perform all the procedures involved in the clinical examination of a pregnant woman, whether presenting complications or otherwise. Some of those procedures are deliberately omitted from this work because they have to be acquired by practice and not merely by reading a book. But that does not mean they cannot be performed by someone who has the necessary expertise and resources, if this is in the interest of the pregnant woman. Those who lack expertise in certain procedures can try to acquire it with the help of a more experienced colleague. In some cases the latter may even be a mother-and-child health worker or a traditional birth attendant. But remember that in all circumstances it is better to ask for advice in case of doubt rather than to risk doing something without the necessary expertise.*

## **Talking with women and their families**

Pregnancy is typically a time of joy and anticipation. It can also be a time of anxiety and concern. Talking effectively with a woman and her family can help build the woman's trust and confidence in her health-care providers.

*Women who develop complications may find it difficult to talk to the providers and to explain their problems. It is the responsibility of the entire health-care team to treat the woman concerned with respect and to put her at ease.*

This means:

- ✓ respecting the woman's dignity and her right to privacy;
- ✓ being sensitive and responsive to the woman's needs;
- ✓ being non-judgmental about the decisions that the woman and her family have made thus far regarding her care.

It is understandable that health personnel may disapprove of a woman's risky behaviour or of a decision which has resulted in delay in seeking care. It is not acceptable, however, to show disrespect for a woman or to disregard a medical condition that is a result of her behaviour. Corrective counselling should be given after the complication has been dealt with, not before or during management of the problem.

## **RIGHTS OF WOMEN**

Providers should be aware of the rights of women receiving maternity care services:

- ✓ Every woman receiving care has a right to information about her health.
- ✓ Every woman has the right to discuss her concerns in an environment in which she feels confident.
- ✓ A woman should know in advance the type of procedure that is going to be performed.
- ✓ A woman (*or her family, if necessary*) should give informed consent before the provider undertakes any procedure.
- ✓ Procedures should be conducted in an environment (*e.g. labour ward*) in which the woman's right to privacy is respected.
- ✓ A woman should be made to feel as comfortable as possible when receiving services.
- ✓ A woman has the right to express her views about the services she receives.

When a provider talks to a woman about her pregnancy or a complication, he or she should use basic communication techniques. These techniques help the provider to establish an honest, caring and trusting relationship with the woman. If a woman trusts the provider and feels that the provider has her best interests at heart, she will be more likely to return to the facility for delivery or to come early if there is a complication.

## COMMUNICATION TECHNIQUES

*Speak in a calm, quiet manner and assure the woman that the conversation is confidential. Be sensitive to any cultural or religious considerations and respect her views.*

*In addition:*

- ✓ Encourage the woman and her family to speak honestly and to give a full account of events surrounding the complication.
- ✓ Listen to what the woman and her family have to say and encourage them to express their concerns; try not to interrupt.
- ✓ Respect the woman's sense of privacy and modesty by closing the door or drawing curtains around the examination table.
- ✓ Let the woman know that she is being listened to and understood.
- ✓ Use supportive non-verbal means of communication such as nodding and smiling.
- ✓ Answer the woman's questions directly in a calm, reassuring manner.
- ✓ Explain what steps will be taken to manage the situation or complication.
- ✓ Ask the woman to repeat the key points to ensure that she has understood.

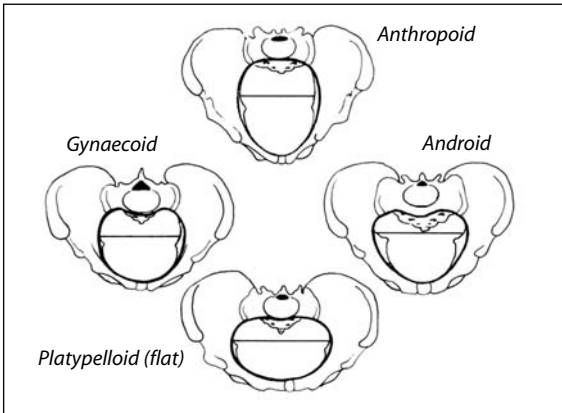
**If a woman must undergo a surgical procedure,** explain to her the nature of the procedure and the risks involved, and help to reduce her anxiety. Women who are extremely anxious have a more difficult time during surgery and recovery.

## CASES TO BE REFERRED FOR DELIVERY

This section describes all the indications for referral to hospital at the time of delivery.

### Screening for cephalopelvic disproportion

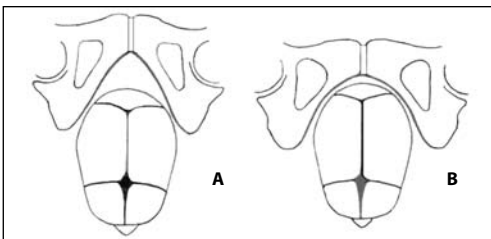
Measurement of the mother's pelvis requires special skills.



Characteristic inlet of the 4 types of pelvis. (For information)

Without going into details, the parameters to be considered are:

- ✓ The presumed foetal weight (*determined by palpation*)
- ✓ Pelvic assessment of the mother  
(see «Another way of assessing the mother's pelvis», next page)
- ✓ Problems occur if there is a disproportion between foetal weight and pelvic measurement. Prognosis remains difficult, however, as such disproportion is not always obvious and may become evident only during labour.
- ✓ Any history of previous pregnancy with cephalopelvic disproportion or related complications, such as obstructed labour or vesico-vaginal or recto-vaginal fistula.



(For information)

**A)** Outlet of android pelvis. The head does not fit into the acute pubic arch and is forced backwards onto the perineum.

**B)** Outlet of gynaecoid pelvis. The head fits snugly into the pubic arch.

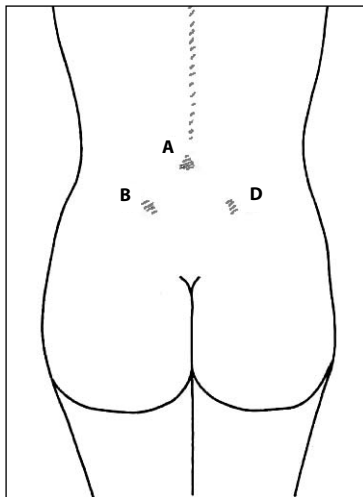


### **Another way of assessing the mother's pelvis**

One simple method of detecting women at risk of cephalopelvic disproportion (CPD) is to measure, using a measuring tape, the mother's height and the transverse diagonal of the Michaelis sacral rhomboid area.<sup>13</sup>

This method may be very useful in peripheral antenatal clinics for identifying such cases and referring them to district hospitals before the onset of labour.

**Maternal height <150 cm or transverse diagonal <9.5 cm indicates a risk of CPD.**



**A)** Lumbar vertebra n°5

**B - D)** Transverse diagonal between the two dimples of the Michaelis sacral rhomboid area.

<sup>13</sup> Liselele H.B. *et al.*, "Maternal height and external pelvimetry to predict cephalopelvic disproportion in nulliparous African women: a cohort study", *British Journal of Obstetrics and Gynaecology*, August 2000, Vol. 107, pp. 947-952.

## **Indications for referral to hospital for delivery**

This list is not comprehensive, as many factors play a role:

- quality of medical care
- accessibility to a hospital
- the mother's own wish to give birth in hospital or at home, etc.

### **Previous history of:**

- ✓ caesarean section
- ✓ obstructed labour
- ✓ vesico-vaginal or recto-vaginal fistula
- ✓ retained placenta
- ✓ perineal tear
  - degree 3 (*anal sphincter ruptured*)
  - degree 4 (*degree 3 + rupture of rectal mucous membrane*)

### **Previous case of:**

- ✓ twin pregnancy
- ✓ abnormal lie
- ✓ breech presentation
- ✓ congenital hip dislocation or any other pelvic problem
- ✓ female genital mutilation (*see next page & pages 140-142*)
- ✓ teenage pregnancy
- ✓ hydramnios
- ✓ ante-partum haemorrhage
- ✓ placenta praevia (*if detected*)
- ✓ pre-eclampsia and eclampsia
- ✓ cardiac failure or any other medical condition placing the mother at risk

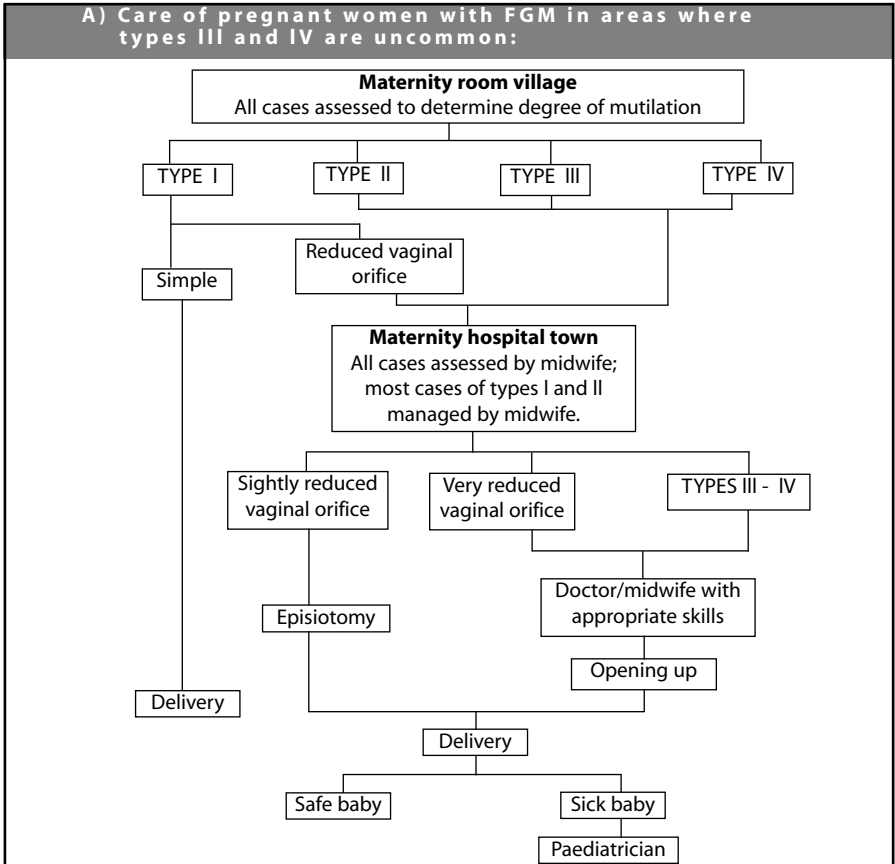
## **Pregnant women with HIV/AIDS**

Many factors have to be considered in this case:

- ✓ Is HIV/AIDS suspected or proved?
- ✓ Is serological testing available?
- ✓ What does the national HIV/AIDS policy recommend for pregnancy and delivery?
- ✓ Is there a referral hospital?

The decision whether or not to recommend a Caesarean section will be taken on a case by case basis (*for more information on HIV/AIDS, see pages 169-170*).

**TWO EXAMPLES OF FLOW CHARTS FOR THE REFERRAL OF PREGNANT WOMAN IN THE PRESENCE OF FEMALE GENITAL MUTILATION (FGM)**



**B) Care of pregnant women with FGM in areas where type III is universal:**

VILLAGE	DISTRICT HEALTH CARE	HOSPITAL
Trained TBA assesses degree of mutilation <b>- Severe scarring</b> →	Reassessment by midwife - Severe scarring: incision by midwife during labour/delivery →	Delivery with expert care. Opening up before or during labour.
<b>- Minor moderate scarring</b> Trained TBA performs opening up during labour  Previous history of extensive perineal trauma →	<b>- Very severe scarring</b> →	Delivery with expert care. Caesarian section may be necessary.

Credit: Dr. Harry Gordon

# EMERGENCY OBSTETRIC CARE

---

These guidelines to antenatal care are intended for nurses, midwives and doctors who work in health centres with very low technical input.

The centre concerned may be the only one or the nearest one accessible to the local community. This means that it will receive not only antenatal patients but also obstetric emergencies.

Such cases will have to be referred to a hospital, but if skilled staff and some medical supplies are available first aid can be given to improve the prognosis and possibly avoid maternal death.

In this section the following topics are covered:

- general information on obstetric emergencies
- emotional and psychological support for women and their families
- what can be done in different obstetric emergencies

## **General information**

The following information on obstetric emergencies draws attention to some matters that should be taken into consideration when an initial assessment is being carried out prior to setting up an antenatal care programme.

Before offering a new service to pregnant women, it is important to know exactly what can and cannot be done in order to avoid raising false hopes.

## **WHO definition of maternal death**

The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration or site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental cause.

**Women can die** during any of the following three periods:

- ✓ **the antenatal period**, which lasts from conception until the beginning of labour
- ✓ **the intrapartum period**, which lasts from the beginning of labour until after the delivery of the afterbirth (*placenta and membranes*)
- ✓ **the postnatal period**, which conventionally lasts for 42 days (*6 weeks*) from after the completion of the intrapartum period.

**In any “safer motherhood” project, the first priority should be to ensure that essential emergency obstetric care is:**

- ✓ available
- ✓ accessible
- ✓ affordable

**There are many reasons why a pregnant woman can die. One of them may be a problem with the «three delays», which are:**

Delay in deciding to seek care, due to:

- ignorance of the seriousness of the condition
- low status of the sick woman
- cost of care

Delay in reaching care once the decision has been made to seek it, due to:

- cost of travel
- distance to the health facility
- impracticalities of travel
- the need to secure permission to travel from an absent family member

Delay in receiving care on reaching the reference hospital, due to:

- bureaucratic mismanagement/poor-quality care
- attending the wrong health facility (e.g., a caesarean section is required and is only available at the district hospital, not at the reference hospital to which the woman has come, so a further transfer is required)

**The three levels of technical care are:**

Level 1 : the community health centre, with the lowest level of technical input

Level 2 : the reference hospital, with skilled staff able to deliver basic emergency obstetric care

Level 3 : the district hospital, which should provide the highest technical level of care

**Essential emergency obstetric care (EEOC) includes basic emergency obstetric care (BEOC) and comprehensive emergency obstetric care (CEOC).**

The crucial procedures or “signal functions” of basic emergency obstetric care are:

- ✓ administration of parenteral (intravenous or by injection) antibiotics
- ✓ administration of parenteral oxytocic drugs
- ✓ administration of parenteral anticonvulsants
- ✓ manual removal of placenta
- ✓ removal of retained products
- ✓ assisted vaginal delivery (vacuum extraction, forceps delivery)

The signal functions of comprehensive emergency obstetric care are:

- ✓ all six basic signal functions
- ✓ surgery (caesarean section) – requiring anaesthesia
- ✓ blood transfusion

## **Emotional and psychological support**

Emergency situations are often very distressing for all concerned and give rise to a range of emotions that can have significant consequences.

### **EMOTIONAL AND PSYCHOLOGICAL REACTIONS**

How each member of the family reacts to an emergency situation depends on:

- the marital status of the woman concerned and her relationship with her partner;
- the social status of the woman/couple and their cultural and religious practices, beliefs and expectations;
- the personalities of the people involved and the quality and nature of social, practical and emotional support;
- the nature, gravity and prognosis of the problem and the availability and quality of health-care services.

Common reactions to obstetric emergencies or death include:

- denial (*feelings of «it can't be true»*);
- guilt regarding possible responsibility;
- anger (*frequently directed towards health-care staff but often masking anger that parents direct at themselves for their «failure»*);
- bargaining (*particularly if the patient hovers for a while between life and death*);
- depression and loss of self-esteem, which may be prolonged;
- isolation (*the feeling of being different or separate from others*), which can be reinforced by care-givers who may avoid people who experience loss;
- disorientation.

## **GENERAL PRINCIPLES OF COMMUNICATION AND SUPPORT**

While each emergency situation is unique, the following general principles offer guidance. Communication and genuine empathy are probably the most important keys to effective care in such situations.

### ***At the time of the event***

- ✓ Listen to those who are distressed. The woman/family will need to discuss her/their hurt and sorrow.
- ✓ Do not change the subject and move on to easier or less painful topics of conversation. Show empathy.
- ✓ Tell the woman/family as much as you can about what is happening. Understanding the situation and its management can reduce their anxiety and prepare them for what will happen next.
- ✓ Be honest. Do not hesitate to admit what you do not know. Maintaining trust matters more than appearing knowledgeable.
- ✓ If language is a barrier to communication, find a translator.
- ✓ Do not pass the problem on to nursing staff or junior doctors.
- ✓ Ensure that the woman has a companion of her choice and, where possible, the same care-giver throughout labour and delivery. Supportive companionship can enable a woman to face fear and pain and help reduce loneliness and distress.
- ✓ Where possible, encourage companions to play an active role in care. Position the companion at the bedside to allow him or her to focus on looking after the woman's emotional needs.
- ✓ Both during and after the event, provide as much privacy as possible for the woman and her family.

**After the event**

- ✓ Give practical assistance, information and emotional support.
- ✓ Respect traditional beliefs and customs and accommodate the family's needs as far as possible.
- ✓ Provide counselling for the woman/family and allow for reflection on the event.
- ✓ Explain the problem, so as to help reduce anxiety and guilt. Many women/families blame themselves for what has happened.
- ✓ Listen and express understanding and acceptance of the woman's feelings. Non-verbal communication may speak louder than words: a squeeze of the hand or a look of concern can say an enormous amount.
- ✓ Repeat information several times and give written information if possible. People experiencing an emergency will not remember much of what is said to them.
- ✓ Health-care providers may feel anger, guilt, sorrow, pain and frustration in the face of obstetric emergencies, and this may lead them to avoid the woman/family. Showing emotion is not a weakness.
- ✓ Remember to care for staff who may themselves experience guilt, grief, confusion and other emotions.



## **Management of emergency cases**

Management of emergency cases will depend on different factors, the most important being the professional skills of staff and the availability of materials.

### **Note**

The skills of a nurse, a midwife and a doctor will naturally be different, which means that the contents of their medical kits may also be different.

This section outlines what each of these three professionals can do at health-centre level. They themselves will then add any further procedures that they know and can perform.

Remember that if the professional concerned lacks the required expertise, it is better to do nothing than to put the woman at even greater risk by doing the wrong thing.

For further information on the above subject, see:

«Comments concerning health services» (page 93).

**Find on next pages how to take care of women in different obstetric emergencies at primary health care level.**

## **RAPID INITIAL ASSESSMENT IN CASE OF CONVULSIONS OR LOSS OF CONSCIOUSNESS**

### **ASSESS**

#### ✓ **Ask**

Pregnant ? Length of gestation ?

#### ✓ **Examine**

*Blood pressure: systolic  $\geq$  140 mm Hg **OR** diastolic  $\geq$  90 mm Hg*

*Temperature: 38° C or more*

### **STABILIZE**

✓ **Shout for help** - Never leave the woman alone.

✓ **Protect the woman from injury**, but do not actively restrain her.

#### ✓ **If she is unconscious**

- Check the airway.

- Position the woman lying down on her left side with two pillows supporting her back.

- Check for neck rigidity.

✓ **If she is convulsing**, turn her on her side to minimize the risk of aspiration should she vomit and to ensure that an airway is open.

### **CONSIDER**

✓ Eclampsia

✓ Tetanus

✓ Epilepsy

✓ Complicated malaria

(see management on next page)

**HEADACHE, BLURRED VISION, CONVULSIONS, OR LOSS OF CONSCIOUSNESS**

If a pregnant woman or a woman who has recently given birth complains of severe headache, blurred vision or has elevated blood pressure, test her urine for proteinuria.

A small proportion of women with eclampsia have normal blood pressure. Treat all women with convulsions as if they have eclampsia until another diagnosis is confirmed.

If a pregnant woman living in a malarial area has fever, headaches or convulsions and malaria cannot be excluded, it is essential to treat the woman for both malaria and eclampsia.

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Convulsions, blood pressure $\geq 140/90$ mm Hg after 20 weeks of pregnancy Proteinuria 2+ or more	<b>Eclampsia</b>	Stabilize according to <b>magnesium sulfate schedule on next page</b> and <i>see management page 151</i> . <b>Refer urgently.</b>
Difficulty opening mouth and chewing	<b>Tetanus</b>	Control spasms with diazepam 10mg IV slowly over 2 minutes. Remove the cause of sepsis. Give benzyl penicillin 2 million units IV every 4 hours. <b>Refer urgently.</b>
Convulsions Past history of convulsions Normal blood pressure	<b>Epilepsy</b>	<b>If the woman is convulsing</b> Give diazepam 10 mg IV slowly over 2 minutes. Repeat if convulsions recur after 10 minutes. <b>Refer urgently</b>
Fever (38° C or more) Chills/rigors Headache Muscle/joint pain Coma Anaemia	<b>Complicated malaria</b>	<b>If convulsions occur</b> Give diazepam 10 mg IV slowly over 2 minutes. <b>If eclampsia is not ruled out</b> Prevent subsequent convulsions with magnesium sulfate. <b>Refer urgently.</b> <b>If complicated malaria is diagnosed and the woman is conscious</b> Give three tablets of sulfadoxine pyrimethamine <b>OR</b> chloroquine. <b>Refer urgently.</b>



**Do not give ergometrine to women with pre-eclampsia, eclampsia, or high blood pressure because it increases the risk of convulsions and intracranial haemorrhage.**

## MAGNESIUM SULFATE<sup>14</sup> SCHEDULES FOR SEVERE PRE-ECLAMPSIA AND ECLAMPSIA

### Loading dose

- ✓ Magnesium sulfate solution 4 g IV over 5 minutes.
- ✓ Follow promptly with 10 g of magnesium sulfate solution, 5 g in each buttock as deep IM injection with 1 mL of 2% lignocaine in the same syringe. Ensure that aseptic technique is practiced when giving magnesium sulfate deep IM injection. Warn the woman that a feeling of warmth will be felt when magnesium sulfate is given.
- ✓ If convulsions recur after 15 minutes or more, give an additional 2 g magnesium sulfate IV over 5 minutes.

### Maintenance dose

- ✓ 5 g magnesium sulfate + 1 mL of 2% lignocaine IM every 4 hours into alternate buttocks. Continue treatment with magnesium sulfate for 24 hours after childbirth or the last convulsion, whichever occurs last.
- ✓ If 50% solution is not available, give 1g of 20% magnesium sulfate solution IV every hour by continuous infusion (only if you can control the rate).

### CLOSELY MONITOR THE WOMAN FOR SIGNS OF TOXICITY

- ✓ **Before repeat administration, ensure that:**  
Respiratory rate is at least 16 breaths per minute.  
Patellar reflexes are present.  
Urine output is at least 30 mL per hour over preceding 4 hours.
- ✓ **Withhold or delay drug if:**  
Respiratory rate falls below 16 breaths per minute.  
Patellar reflexes are absent.  
Urine output falls below 30 mL per hour over preceding 4 hours.
- ✓ **Keep antidote ready:**  
***In case of respiratory arrest:***  
Assist ventilation (*mask and bag*).  
Give calcium gluconate 1 g (10 mL of 10% solution) IV slowly to antagonize the effects of magnesium sulfate until respiration restarts.
- ✓ **If referral is delayed or the woman is in late labor**  
Continue treatment with magnesium sulfate:
  - Give magnesium sulfate 5 g IM plus 1 mL of 2% lignocaine (*in alternate buttock*) every 4 hours.
  - Continue treatment for 24 hours after the birth or after the last convulsion, whichever occurs last.

Monitor urine output.

---

<sup>14</sup> Magnesium sulfate comes in different concentrations (e.g., 20%, 40%, 50%). When giving injections IM, it is best to use higher concentrations (e.g., 50%) to decrease the total volume required. In the ICRC, the concentration of 50% is the only one provided.

## **DIAZEPAM SCHEDULES FOR SEVERE PRE-ECLAMPSIA AND ECLAMPSIA**

**Use diazepam only if magnesium sulfate is not available.**

### **INTRAVENOUS ADMINISTRATION**

#### **Loading dose**

- ✓ Give diazepam 10 mg IV slowly over 2 minutes.
- ✓ If convulsions recur, repeat loading dose.

#### **Maintenance dose**

**If woman is in late labour or referral is delayed**, give a maintenance dose as follows:

- ✓ Give diazepam 40 mg in 500 mL IV fluids (Ringer's lactate or normal saline) over 6-8 hours, titrated to keep the woman sedated but rousable
- ✓ Stop the maintenance dose if respirations drop below 16 breaths per minute. Maternal respiratory depression may occur when dose exceeds 30mg in 1 hour.
- ✓ Do not give more than 100 mg of diazepam in 24 hours.

### **RECTAL ADMINISTRATION WHEN IV ACCESS IS NOT POSSIBLE**

#### **Loading dose**

- ✓ Give 20 mg in a 10 mL syringe:
  - Remove the needle, lubricate the barrel and insert the syringe into the rectum to half its length.
  - Discharge the content and leave the syringe in place, holding the buttocks together for 10 min to prevent expulsion of the drug.
  - Alternatively, the drug may be instilled in the rectum through a catheter.
- ✓ **If convulsions are not controlled within ten minutes**, administer an additional 10 mg or more, depending on the size of the woman and her clinical response.

**Be prepared to assist ventilation.**

## **RAPID INITIAL ASSESSMENT IN CASE OF FEVER (TEMPERATURE OF 38°C OR MORE)**

### **ASSESS**

#### ✓ **Ask**

Weak, lethargic?

Frequent, painful urination?

#### ✓ **Examine**

Unconscious

*Temperature:* 38°C or more

*Neck:* stiffness

*Lungs:* shallow breathing, consolidation

*Abdomen:* extreme tenderness

*Vulva:* purulent discharge

*Breasts:* tender

### **STABILIZE**

***If the woman is in very bad general state:*** (signs of sepsis: fever, foul-smelling vaginal discharge, low blood pressure, signs of shock)

**GIVE** ampicillin 2 g IV every 6 hours

**PLUS** gentamicin 5 mg/kg body weight IV every 24 hours

**PLUS** metronidazole 500 mg IV every 8 hours.

#### **Refer urgently.**

Start an IV infusion (two if possible) using a large-bore cannula or needle.

Rapidly infuse Ringer's lactate or normal saline at the rate of 1 L in 15-20 minutes.

Give at least 2 L of fluid in the first hour.

### **CONSIDER**

#### **→ *Fever during pregnancy and labour***

✓ Septic abortion

✓ Amnionitis

✓ Complicated malaria

✓ Typhoid

#### **→ *Fever after childbirth***

✓ Metritis

✓ Wound cellulitis

✓ Complicated malaria

✓ Typhoid

✓ Mastitis

(see management on following pages)

## FEVER DURING PREGNANCY AND LABOUR (TEMPERATURE OF 38°C OR MORE)

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Fever/chills Foul-smelling vaginal discharge in first 22 weeks Tender uterus	<b>Septic abortion</b>	Immediately give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours until woman is fever-free for 48 hours. <b>Prior to 16 weeks</b> <b>Refer urgently</b> after giving antibiotics for manual vacuum aspiration (MVA). <b>After 16 weeks</b> <b>Refer urgently</b> after giving antibiotics.
Fever/chills Foul-smelling, watery discharge after 22 weeks Abdominal pain	<b>Amnionitis</b>	Immediately give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours. <b>Refer for childbirth.</b>
Fever/chills Headache Confusion or coma Anaemia Convulsions	<b>Complicated malaria</b>	<b>If woman is conscious</b> Give three tablets of sulfadoxine/pyrimethamine <b>OR</b> chloroquine <b>and refer urgently.</b> <b>If woman is unconscious or convulsing</b> Give diazepam 10 mg IV slowly over 2 minutes. <b>Refer urgently.</b>
Fever Headache Dry cough Malaise Anorexia Enlarged spleen	<b>Typhoid</b>	Give ampicillin 1 g by mouth 4 times per day <b>OR</b> amoxicillin 1 g by mouth three times per day for 14 days. Alternative therapy will depend on local sensitivity patterns. <b>Refer urgently.</b>

**FEVER AFTER CHILDBIRTH  
(TEMPERATURE OF 38°C OR MORE)**

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Fever/chills Lower abdominal pain Purulent, foul-smelling lochia Tender uterus	<b>Metritis</b> <i>Delayed or inadequate treatment may result in:</i> Pelvic abscess Peritonitis Septic shock Deep vein thrombosis Pulmonary embolism Chronic pelvic infection Tubal blockage and infertility	Immediately give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours, <b>PLUS</b> metronidazole 500 mg IV every 8 hours until woman is fever-free for 48 hours. <b>Refer urgently.</b>
Painful and tender wound Erythema and oedema beyond edge of incision	<b>Wound cellulitis</b>	Immediately give penicillin G 2 million units IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours. <b>Refer urgently.</b>
Symptoms and signs of uncomplicated malaria Coma Anaemia	<b>Complicated malaria</b>	Infuse quinine dihydrochloride 20 mg/kg body weight in IV fluids (5% dextrose, normal saline, or Ringer's lactate) over 4 hours. Wait 4 hours after completing the loading dose. Then, infuse quinine dihydrochloride 10 mg/kg body weight over 4 hours. <u>Repeat every 8 hours.</u> <b>Refer urgently.</b>



**FEVER AFTER CHILDBIRTH** (contd.)  
**(TEMPERATURE OF 38°C OR MORE)**

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Fever Headache Dry cough Malaise Anorexia Enlarged spleen	<b>Typhoid</b>	Give ampicillin 1g by mouth 4 times per day <b>OR</b> amoxicillin 1g by mouth 3 times per day for 14 days.  Alternative therapy will depend on local sensitivity patterns. <b>Refer urgently.</b>
One or more adjacent breast segments are inflamed and appear as a wedge-shaped area of redness and swelling, usually affecting only one breast, 3-4 weeks after delivery.  Fever General malaise  <i>Main cause:            cracked nipple(s)            if infective,            milk stasis            if non-infective</i>	<b>Mastitis</b>  Can be infective or not.  Different from engorgement, which can occur between the second and fourth day postpartum and affect both breasts.	<u>Antibiotic treatment in both cases, whether infective or not.</u>  Give cloxacillin 500 mg by mouth four times per day for 10 days <b>OR</b> erythromycin 250 mg by mouth three times per day for 10 days.  Give paracetamol 500 mg by mouth as needed. Do not stop breastfeeding. Give the mother advice on good feeding technique.  <b>Complication:</b> breast abscess (antibiotic-surgery-stop breastfeeding temporarily from the breast concerned).

## **RAPID INITIAL ASSESSMENT IN CASE OF RESPIRATORY DISTRESS**

### **ASSESS**

#### ✓ **Look for**

- Absence of breathing
- Rapid breathing (30 breaths or more per minute)
- Obstructed breathing or gasping
- Pale or bluish (cyanotic) skin colour

#### ✓ **Examine**

- Mouth for foreign bodies (such as pieces of food)
- Lungs for wheezing or rales

### **STABILIZE**

#### ***If the woman IS NOT breathing***

##### ✓ **Shout for help.**

- ✓ Keep the woman in supine position with her head tilted backwards.
- ✓ Lift her chin to open the airway.
- ✓ Inspect her mouth for foreign body and remove if found.
- ✓ Clear secretions from her throat.
- ✓ Ventilate with bag and mask until she starts breathing.

#### ***If the woman IS BREATHING BUT still in respiratory distress***

##### ✓ **Shout for help.**

- ✓ Rapidly evaluate vital signs (*blood pressure, pulse, breathing*).
- ✓ Position the woman lying down on her left side with two pillows supporting her back.
- ✓ Give oxygen at 4-6 L per minute if available.
- ✓ **Refer urgently.**

### **CONSIDER**

- ✓ Severe anaemia
- ✓ Heart failure due to anaemia
- ✓ Heart failure due to heart disease

(see management on next page)

**DIFFICULTY IN BREATHING**

<b>SIGNS/SYMPTOMS</b>	<b>PROBABLE DIAGNOSIS</b>	<b>MANAGEMENT</b>
<p>Difficulty in breathing Pallor of conjunctiva, tongue, nail beds, and/or palms Haemoglobin 7 g/dL or less Haematocrit 20% or less</p>	<p><b>Severe anaemia</b> <i>(see page 139)</i></p>	<p>Start an IV infusion using a large-bore cannula or needle.</p> <p>Infuse normal saline or Ringer's lactate at the rate of 1 L over 8 hours.</p> <p><b>Refer urgently for transfusion.</b></p>
<p>Symptoms and signs of severe anaemia, plus Oedema Cough Rales Swelling of legs Enlarged liver Prominent neck veins</p>	<p><b>Heart failure due to anaemia</b></p>	<p>Start an IV infusion using a large-bore cannula or needle.</p> <p>Infuse normal saline or Ringer's lactate at the rate of 1 L over 8 hours.</p> <p><b>Refer urgently for transfusion.</b></p>
<p>Difficulty in breathing Diastolic murmur and/or Harsh systolic murmur with palpable thrill</p>	<p><b>Heart failure due to heart disease</b></p>	<p>Start an IV infusion using a large-bore cannula or needle.</p> <p><b>Infuse normal saline or Ringer's lactate at the rate of 1 L over 12 hours.</b></p> <p>Position the woman on her left side.</p> <p>Give oxygen at 4-6 L per minute if available.</p> <p><b>Refer urgently.</b></p>

## **RAPID INITIAL ASSESSMENT IN CASE OF VAGINAL BLEEDING**

### **ASSESS**

#### ✓ **Ask**

Pregnant? Length of gestation?

Abdominal pain?

#### **After 22 weeks of pregnancy or childbirth, ask if:**

Recently given birth, date of childbirth

Placenta was delivered completely with the membranes or not

Bleeding slow and continuous (how long), or sudden onset

#### ✓ **Examine**

*Vulva*: amount of bleeding, trauma

*Vagina*: lacerations, placenta

*Cervix*: products of conception, lacerations

*Uterus*: retained placenta, atony

*Bladder*: full (*If it is the case, the bladder has to be emptied spontaneously or with a catheter*)

### **STABILIZE**

#### **The aim is to stop the bleeding.**

Assess the cause of bleeding on the basis of the stage of gestation and treat accordingly.

### **CONSIDER**

#### **→ Vaginal bleeding in early pregnancy, up to 22 weeks**

- ✓ Ectopic pregnancy
- ✓ Molar pregnancy
- ✓ Abortion

#### **→ Vaginal bleeding after 22 weeks of pregnancy or during labour before childbirth**

- ✓ Abruptio placentae
- ✓ Placenta praevia
- ✓ Ruptured uterus

#### **→ Vaginal bleeding after childbirth**

- ✓ Atonic uterus
- ✓ Tears of cervix, vagina or perineum
- ✓ Retained placenta or placental fragments
- ✓ Inverted uterus
- ✓ Delayed postpartum haemorrhage

(see management on following pages)

**VAGINAL BLEEDING IN EARLY PREGNANCY (UP TO 22 WEEKS)**

<b>SIGNS/SYMPTOMS</b>	<b>PROBABLE DIAGNOSIS</b>	<b>MANAGEMENT</b>
Light bleeding Abdominal pain Closed cervix Uterus slightly larger than normal Uterus softer than normal	<b>Ectopic pregnancy</b> <i>(see pages 183-184)</i>  <u>Unruptured:</u> - Symptoms of early pregnancy - Abdominal and pelvic pain  <u>Ruptured:</u> - Signs of shock - Collapse, weakness - Pulse 100 beats per minute or more - Systolic blood pressure of 90 mm Hg or less - Acute abdominal, pelvic pain - Rebound tenderness - Pallor	<b>Arrange for immediate transport for laparotomy.</b>  <u>If unruptured (woman not in shock)</u> - Insert IV line and infuse Ringer's lactate or normal saline 1L in 6-8 hours  <u>If ruptured (woman in shock)</u> - Insert IV line and infuse normal saline or Ringer's lactate 1L in 15-20 minutes (as rapidly as possible). - Repeat 1 L every 30 minutes until pulse slows to less than 100 beats per minute and systolic BP increases to 100 mm Hg or more then 1L in 6-8 hours - Record time and amount of fluids given.
Heavy bleeding Dilated cervix Uterus larger than dates Uterus softer than normal Partial expulsion of products of conception, which resemble grapes	<b>Molar pregnancy</b> <i>(see page 185)</i>	<b>If diagnosis is uncertain</b>  <b>Stabilize and refer urgently for MVA.</b> (Manual vacuum aspiration)

**IF UNSAFE ABORTION IS SUSPECTED**

- ✓ Examine for signs of infection or uterine, vaginal, or bowel injury.
- ✓ If infection is present, begin antibiotics before referring for manual vacuum aspiration (MVA).
- ✓ If uterine, vaginal, or bowel injury is present, infuse IV fluids and **refer urgently for surgery and MVA.**
- ✓ If herbs, local medications or caustic substances were used, thoroughly irrigate the vagina to remove them.

More information on abortion follow. →

## ABORTION

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Light bleeding Closed cervix Uterus corresponds to dates Cramping /lower abdominal pain Uterus softer than normal	<b>Threatened abortion</b> Pregnancy may continue	Medical treatment usually not necessary; follow-up in antenatal clinic. Woman should avoid hard work and intercourse. <u>If bleeding does not stop:</u> <b>REFER (may be ectopic pregnancy, twins, or molar pregnancy).</b>
Heavy bleeding Dilated cervix Uterus corresponds to dates or smaller Cramping /lower abdominal pain Tender uterus No expulsion of products of conception	<b>Inevitable abortion</b> Pregnancy will not continue and will proceed to incomplete or complete abortion	<b>Stabilize and refer urgently.</b> Give ergometrine 0.2 mg IM (repeat after 15 minutes if necessary) <b>OR</b> misoprostol 400 µg orally (repeat once after 4 hours if necessary). <b>If pregnancy is greater than 16 weeks</b> Await spontaneous expulsion of products of conception. If necessary to help expulsion, infuse oxytocin 40 units in 1 L normal saline or Ringer's lactate 40 drops per minute.
Heavy bleeding Dilated cervix Uterus smaller than dates Cramping /lower abdominal pain Partial expulsion of products of conception	<b>Incomplete abortion</b> Products of conception are partially expelled	If bleeding is light to moderate and pregnancy is less than 16 weeks remove products of conception protruding through cervix in the vagina with your fingers. Give ergometrine 0.2 mg IM (repeat after 15 minutes if necessary) <b>OR</b> misoprostol 400 µg by mouth (repeat once after 4 hours if necessary). <b>If bleeding is heavy and pregnancy is less than 16 weeks - Refer urgently.</b> <b>If bleeding is heavy and pregnancy is greater than 16 weeks</b> <b>Stabilize and refer urgently.</b> Give ergometrine 0.2 mg IM (repeat after 15 minutes if necessary) <b>OR</b> misoprostol 400 µg by mouth (repeat once after 4 hours if necessary)
Light bleeding Closed cervix Uterus smaller than dates and softer than normal Slight cramping/ lower abdominal pain History of expulsion of products of conception (ask or check if complete)	<b>Complete abortion</b> Products of conception are completely expelled	Evacuation of uterus usually not necessary. Observe for heavy bleeding. Give ergometrine 0.2 mg IM or misoprostol 400 µg orally. <b>Refer if bleeding does not stop immediately.</b>

## VAGINAL BLEEDING AFTER 22 WEEKS OF PREGNANCY OR DURING LABOUR BEFORE CHILDBIRTH

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Bleeding Intermittent or constant abdominal pain Severe abdominal pain	<b>Abruptio placentae</b> (see pages 188-189) <b>Ruptured uterus</b> <b>Placenta praevia</b> (see pages 186-187)	Start an IV infusion ( <i>two if possible</i> ) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. <b>Refer urgently.</b>

## VAGINAL BLEEDING AFTER CHILDBIRTH

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Increased vaginal bleeding within the first 24 hours after childbirth. Uterus soft and not contracted.	<b>Atonic uterus</b> ( <i>if it is certain that placenta and membranes are completely out, if it is not the case, see next page</i> )	Massage the fundus of the uterus through the woman's abdomen (see annex II.A.1, page 130). <b>Administer oxytocin IV:</b> infuse 20 units in 1 L normal saline or Ringer's lactate at 60 drops per minute until uterus is contracted, then 20 units in 1 L normal saline or Ringer's lactate at 40 drops per minute. Do not give more than 3 L. <b>PLUS IM:</b> 10 units <b>If oxytocin not available</b> Administer ergometrine/methylergometrine ( <i>do not use if signs/symptoms of pre-eclampsia, hypertension, or heart disease</i> ). (see page 107) <b>IM or IV:</b> slowly infuse 0.2 mg. Repeat 0.2 mg IM after 15 minutes. If required, give 0.2 mg IM or IV (slowly) every 4 hours. <b>If bleeding does not stop</b> Start an IV infusion ( <i>two if possible</i> ) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. <b>Refer urgently.</b>

**VAGINAL BLEEDING AFTER CHILDBIRTH** (contd.)

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
<p>Increased vaginal bleeding within the first 24 hours after childbirth</p>	<p><b>Tears of cervix, vagina, or perineum</b></p>	<p>Examine the woman carefully to detect any tears in the vagina or perineum. If the placenta and the membranes are completely out, the uterus is well contracted, the blood is not coming from tears of the vagina and/or the perineum, and the bleeding does not stop, there may be a tear in the cervix. <b>Refer.</b></p> <p><b>If bleeding does not stop: Refer urgently.</b></p>
<p>Placenta not delivered within 30 minutes after childbirth</p> <p>Portion of maternal surface of placenta missing, or torn membranes with vessels (<i>there may be no bleeding</i>)</p>	<p><b>Retained placenta or placental fragments</b></p>	<p>Ensure that the bladder is empty (<i>catheterize if necessary</i>).</p> <p><b>If you can see the placenta</b> Ask the woman to push it out (<i>see pages 130-134</i>).</p> <p><b>If you can see placental fragments in the vagina:</b> remove by hand (<i>wear sterile or high-level disinfected gloves; wrap sterile gauze around fingers</i>).</p> <p><b>If placenta is not expelled and cannot be seen or felt.</b> Give oxytocin 10 units IM.</p> <p><b>If placenta is undelivered after 30 minutes of oxytocin and the uterus is contracted</b> Attempt controlled cord traction (<i>see pages 130-134</i>).</p> <p><b>If controlled cord traction is unsuccessful</b> Start an IV infusion (<i>two if possible</i>) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. <b>Refer urgently.</b></p> <p><b>If signs of infection</b> Give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours.</p> <p><b>If placenta or placental fragments cannot be removed OR bleeding does not stop immediately. Refer urgently.</b></p>



**VAGINAL BLEEDING AFTER CHILDBIRTH** (contd.)

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
Uterine fundus not felt on abdominal palpation Slight or intense pain	<b>Inverted uterus</b>	Start an IV infusion ( <i>two if possible</i> ) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. Give a single dose of prophylactic antibiotics: ampicillin 2g IV PLUS metronidazole 500 MG IV. <b>OR</b> Give cefazolin 1 g IV PLUS metronidazole 500 mg IV. <b>Refer urgently.</b> <b>If there is fever and/or foul-smelling vaginal discharge</b> give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours. <b>Refer urgently.</b>
Bleeding occurs more than 24 hours after childbirth Uterus softer and larger than expected for time elapsed since childbirth	<b>Delayed postpartum haemorrhage</b>	<b>Administer oxytocin IV:</b> infuse 20 units in 1 L normal saline or Ringer's lactate at 60 drops per minute until uterus is contracted, then 20 units in 1 L normal saline or Ringer's lactate at 40 drops per minute. Do not give more than 3 L. <b>PLUS IM:</b> 10 units. <b>If oxytocin is not available</b> Administer ergometrine/methylergometrine ( <i>do not use if signs/symptoms of pre-eclampsia, hypertension, or heart disease</i> ). <b>IM or IV:</b> slowly infuse 0.2 mg. Repeat 0.2 mg IM after 15 minutes. If required, give 0.2 mg IM or IV (slowly) every 4 hours. <b>Refer urgently.</b> <b>If there is fever and/or foul-smelling vaginal discharge</b> give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours. <b>Refer urgently.</b>

## **RAPID INITIAL ASSESSMENT IN CASE OF ABDOMINAL PAIN**

### **ASSESS**

- ✓ **Ask**
  - Pregnant? Length of gestation?
- ✓ **Examine**
  - Blood pressure: diastolic 90 mm Hg or less
  - Temperature: 38°C or more
  - Uterus: length of gestation or date of childbirth

### **CONSIDER**

#### **→ Abdominal pain in early pregnancy (up to 22 weeks)**

- ✓ Abortion (see pages 117-118)
- ✓ Ectopic pregnancy (see pages 117 & 183-184)
- ✓ Peritonitis (see below)

#### **→ Abdominal pain in later pregnancy or childbirth**

- ✓ Abruptio placentae
- ✓ Ruptured uterus
- ✓ Amnionitis
- ✓ Metritis
- ✓ Peritonitis

(See management on next page)

## **ABDOMINAL PAIN IN EARLY PREGNANCY (UP TO 22 WEEKS)**

<b>SIGNS/SYMPTOMS</b>	<b>PROBABLE DIAGNOSIS</b>	<b>MANAGEMENT</b>
Low-grade fever/chills Lower abdominal pain Absent bowel sounds	<b>Peritonitis</b>	Start an IV infusion using a large-bore cannula or needle.  Infuse normal saline or Ringer's lactate at the rate of 1L in 6-8 hours unless patient in shock.  Immediately give penicillin G 2 million units IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours.  <b>Refer urgently.</b>

**ABDOMINAL PAIN IN LATER PREGNANCY OR CHILDBIRTH**

<b>SIGNS/SYMPTOMS</b>	<b>PROBABLE DIAGNOSIS</b>	<b>MANAGEMENT</b>
Intermittent or constant abdominal pain Bleeding (intra-abdominal and/or vaginal)	<b>Abruptio placentae</b> <i>(see pages 119 &amp; 188-189)</i>	Start an IV infusion (two if possible) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. <b>Refer urgently</b>
Severe abdominal pain (may decrease after rupture) Bleeding (intra-abdominal and/or vaginal)	<b>Ruptured uterus</b>	Start an IV infusion (two if possible) using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. <b>Refer urgently.</b>
Abdominal pain Foul-smelling, watery vaginal discharge after 22 weeks of pregnancy Fever/chills	<b>Amnionitis</b>	Immediately give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours. <b>Refer for childbirth.</b>
Lower abdominal pain Fever/chills Purulent, foul-smelling lochia Tender uterus	<b>Metritis</b>	Immediately give ampicillin 2 g IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours until woman is fever-free for 48 hours. <b>Refer urgently.</b>
Low-grade fever/chills Lower abdominal pain Absent bowel sounds	<b>Peritonitis</b>	Provide nasogastric suction. Start an IV infusion using a large-bore cannula or needle. Rapidly infuse normal saline or Ringer's lactate at the rate of 1 L in 15-20 minutes. Give at least 2 L of fluid in the first hour. Immediately give penicillin G 2 million units IV every 6 hours <b>PLUS</b> gentamicin 5 mg/kg body weight IV every 24 hours <b>PLUS</b> metronidazole 500 mg IV every 8 hours. <b>Refer urgently.</b>

## **PROLAPSED CORD**

### **Definition**

The cord lies in front of the presenting part or alongside it following rupture of the membranes. It may remain in the vagina or be visible outside.

### **Aetiologies**

- ✓ Transverse lie
- ✓ Breech presentation
- ✓ Prematurity
- ✓ Premature rupture of membranes
- ✓ Placenta praevia
- ✓ Multiple pregnancy
- ✓ Hydramnios
- ✓ Multiparity
- ✓ Long cord
- ✓ Amniotomy

### **Diagnosis**

- Suspected in case of ruptured membranes with abnormal foetal heart sounds (deceleration, bradycardia).
- Established if the cord is visible inside or outside the vagina.

### **Management**

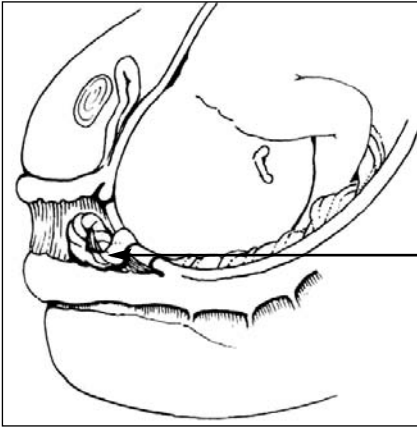
**Refer the pregnant woman** if foetal heart sounds can no longer be heard and one of the following complications is present:

- Multiple pregnancy: the first foetus may be dead but not necessarily the other(s)
- Malpresentation of the foetus, which needs to be delivered in hospital or by caesarean section
- Bleeding, which can be due to placenta praevia (rare)

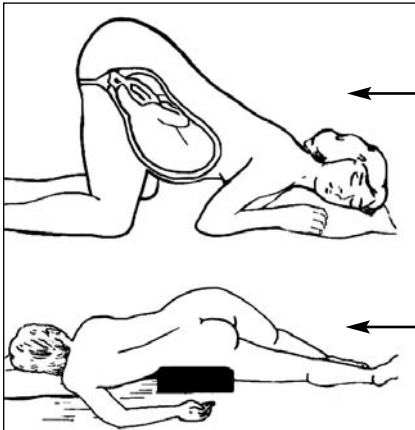
**Wait for delivery** if there are no more foetal heart sounds and none of the above complications is present, it is a case of foetal death.

**Refer the pregnant woman** if there are foetal heart sounds and/or the cord is pulsating:

- Replace the cord inside the vagina if it is protruding, in order to avoid arterial spasm due to temperature difference.
- Never attempt to replace the cord inside the uterus, because failure is guaranteed and the additional manipulations increase the risk of spasm.



Prolapsed cord



Woman in the knee-chest position. Thighs must be straight. The foetus gravitates towards the fundus and pressure on the cord is relieved. This position is not useful during transportation.

Woman in the exaggerated Sims' position. Two large foam-rubber wedges or pillow elevate the buttocks further.

**UNSATISFACTORY PROGRESS IN LABOUR**

SIGNS/SYMPTOMS	PROBABLE DIAGNOSIS	MANAGEMENT
In labour for more than 12 hours Presentation other than vertex	<b>Obstruction</b> <b>Malpresentation or malposition</b>	Start an IV infusion using a large-bore cannula or needle. Infuse Ringer's lactate or normal saline at the rate of 3 mL/minute over 6 hours with glucose 5% in order to maintain the glucose level of the foetus, which can be low in this situation. <b>Refer urgently.</b>

## **TRAUMA IN PREGNANCY**

### **Introduction**

Trauma of any kind is the most frequent cause of maternal death which is not obstetric in origin.

Maternal compromise and the severity of the injury are the principal factors in trauma-related foetal demise.

In such cases, attention is often focused on the abdomen because of the pregnancy. However the pregnancy may not easily be detected, especially if it is at an early stage and the woman is unable to make herself understood.

### **Principles of trauma management**

- ✓ «Save the mother, save the foetus»

In fact, the mother takes priority over the foetus. This does not mean that the foetus does not have to be considered in the management of maternal trauma, but the mother's health will be the first concern. It must be remembered that a woman is in charge of the family.

- ✓ Pregnant women are more vulnerable to injury.
- ✓ Initial treatment priorities for an injured pregnant patient remain the same as for a non-pregnant patient: A, B, C, etc.

Finally, trauma during pregnancy does not necessarily put the health of the foetus at risk. This will depend on:

- which part(s) of the mother's body are affected (*whether or not the abdomen or lower back is involved*)
- whether there is haemodynamic problem
- whether the trauma causes uterine contractions that can lead to premature birth, vaginal bleeding, etc.

### **Aetiologies**

- ✓ Blunt trauma may be caused by:
  - road accidents
  - assaults
  - falls

Common consequences are abruptio placentae, foetal skull fracture, rupture of the uterus, premature labour.

- ✓ Penetrating trauma may be caused by:
  - gunshot wounds
  - stab wounds
  - shrapnel injuries

- ✓ Burns  
In general, the survival of the mother allows survival of the foetus.

## Risks for the mother

- ✓ Complications are related to the stage of the pregnancy and the corresponding physiological changes.

**Uterus:** larger, becoming intra-abdominal after 12 weeks with higher blood flow

**Placenta:** lack of elasticity (abruptio placentae), decreased blood flow with maternal hypotension.

**Pelvis:** venous engorgement.

**Gastrointestinal tract:** intestinal displacement into upper quadrant, gastric emptying time extended (full stomach).

**Respiratory tract:** elevated diaphragm, hypocapnia (alkalosis), decreased tolerance of hypoxaemia.

**Cardiovascular system:** increased heart rate, increased cardiac input, increased plasma volume, signs of ongoing haemorrhage delayed.

- ✓ The hypervascularization of pelvic organs increases the risk of haemorrhage.
- ✓ Uterine rupture is rare and is more likely to occur at the end of pregnancy. Foetal death is inevitable, unless the woman can immediately undergo caesarean section. Maternal death, however, depends more on associated lesions and the availability of treatment.

## Risks for the foetus

- ✓ abortion
- ✓ foetal death
- ✓ foetal injury
- ✓ abruptio placentae
- ✓ premature birth
- ✓ foeto-maternal haemorrhage

## Management

- ✓ In triage conditions a pregnant woman has priority.
- ✓ The best early treatment for the foetus is optimum resuscitation of the mother.
- ✓ Do not attempt foetal assessment in the field.
- ✓ Before referring the pregnant woman:
  - Follow «The guidelines for Rehydration» (*see annex II.B, page 135*).
  - To avoid compression syndrome on the vena cava (*see page 75*), place the patient on her left side for transport. If this is not possible, let her lie on her back and raise her right buttock so that she can lean on her left side, or manually displace the uterus to the left side.
  - Dress the wound(s) as appropriate.
  - Raise her legs for better venous return.
- ✓ Premature contractions
  - Uterine contractions frequently start secondary to trauma, but in most cases they will cease with rest and good intravenous hydration (as long as the cervix is not already excessively dilated), and delivery remains exceptional.
  - In case of imminent delivery, let the woman deliver before transferring her, especially if the referral hospital is far away.**





# **ANNEXES PART II**

Antenatal Consultations

## ANNEX II.A.1 CONTROLLED CORD TRACTION

- ✓ Clamp the cord close to the perineum using sponge forceps within 1 minute of birth. Hold the clamped cord and the end of the forceps with one hand.
- ✓ Place the other hand just above the woman's pubic bone and stabilize the uterus by applying counter-traction during controlled cord traction. This helps prevent inversion of the uterus.
- ✓ Keep slight tension on the cord and await a strong uterine contraction (2-3 minutes).
- ✓ When **the uterus becomes rounded or the cord lengthens**, pull downward on the cord very gently to deliver the placenta. Do not wait for a gush of blood before applying traction on the cord. Continue to apply counter-traction to the uterus with the other hand.
- ✓ If the placenta does not descend during 30 to 40 seconds of controlled cord traction (i.e. there are no signs of placental separation), do not continue to pull on the cord.
  - Gently hold the cord and wait until the uterus is well contracted again. If necessary, use sponge forceps to clamp the cord closer to the perineum as it lengthens.
  - With the next contraction, repeat controlled cord traction with counter-traction.

**Note** *Never apply cord traction (pull) without applying counter-traction (push) above the pubic bone with the other hand.*

- ✓ As the placenta delivers, the thin membranes can tear off. Hold the placenta in two hands and gently turn it until the membranes are twisted.
- ✓ Slowly pull to complete the delivery.
- ✓ **If the membranes tear**, gently examine the upper vagina and cervix wearing high-level disinfected or sterile gloves and use sponge forceps to remove any pieces of membrane that are present.
- ✓ Look carefully at the placenta to be sure none of it is missing. **If a portion of the maternal surface is missing or there are torn membranes with vessels**, suspect retained placental fragments.
- ✓ **If you can feel the placenta or placental fragments in the vagina**, remove by hand (wear sterile or high-level disinfected gloves; wrap sterile gauze around fingers).
- ✓ **If uterine inversion occurs**, try to immediately replace the uterus. If failure, refer.
- ✓ **If the cord is pulled off**, manual removal of the placenta may be necessary.

### UTERINE MASSAGE

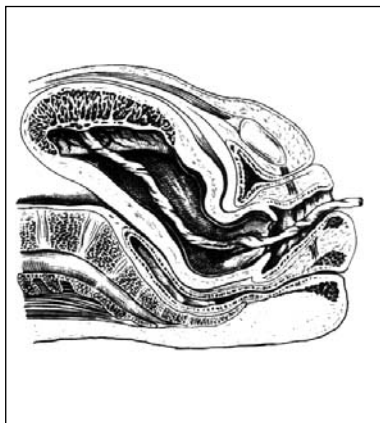
- ✓ Immediately massage the fundus of the uterus through the woman's abdomen until the uterus is contracted.
- ✓ Repeat uterine massage every 15 minutes for the first 2 hours.
- ✓ Ensure that the uterus does not become relaxed (soft) after you stop uterine massage.

*Please, see the illustrations of placental delivery on next pages. —>*

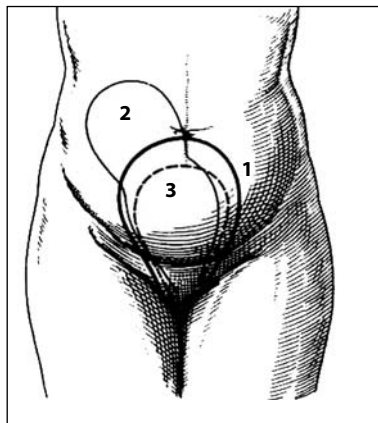
---

This annex II.A.1 (only page 130) comes from :  
*Integrated Management of Pregnancy and Childbirth. Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors.* Department of Reproductive Health and Research, WHO, Geneva, 2003

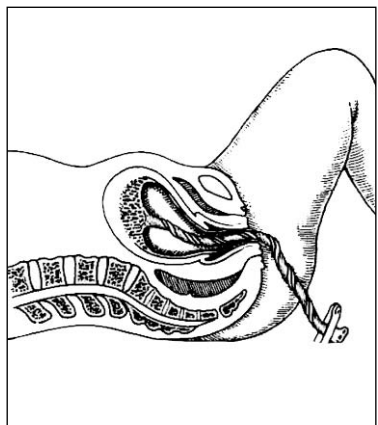
**PLACENTAL DELIVERY**



*Physiological position of the placenta.*



- 1.** *The placenta has not separated.*
- 2.** *The placenta has now separated and has descended into the lower segment of the uterus.*
- 3.** *The contracted uterus after expulsion of the placenta.*



*After delivery, the umbilical cord is outside of the vagina, the placenta has not yet separated.*

## PLACENTAL DELIVERY

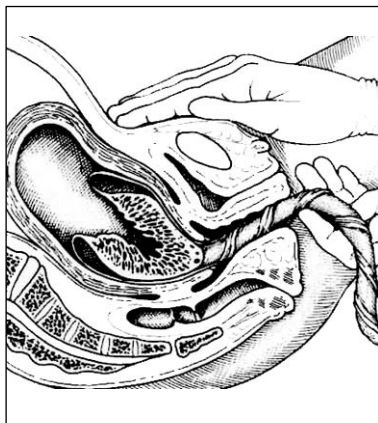
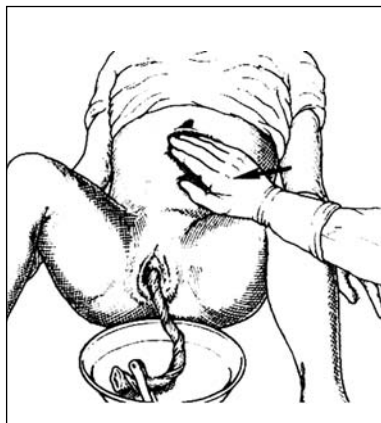


*Manoeuvre to check for separation of the placenta: the hand is placed above the pubic bone, exerting upward pressure. If the cord follows the same movement, the placenta has not yet separated.*

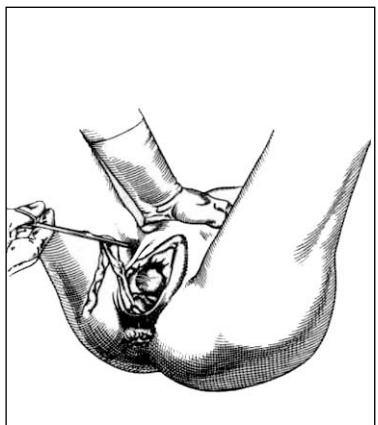


*The placenta has now separated. When exerting upward pressure above the pubic bone, the cord does not go back up.*

**PLACENTAL DELIVERY**

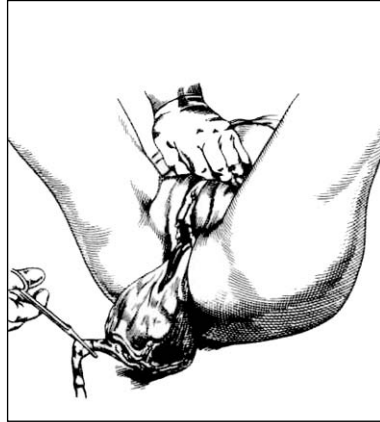
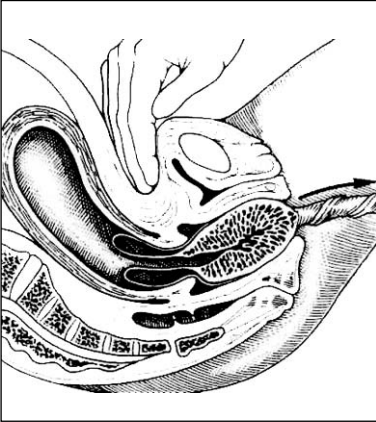


*After ensuring that the placenta has separated, the hand supports the uterus fundus and lightly puts pressure on it.*



*One hand presses firmly downwards, expelling the placenta at the same time (simultaneously asking the mother to push if the placenta is not coming easily). The placenta is cupped in the other hand.*

**PLACENTAL DELIVERY**



*The expulsion of the placenta is helped along by pressure above the pubic bone. Never pull on the cord, just keep it under tension.*

---

When the placenta is out of the vagina but part of the membranes are still inside, do not pull out, just hold the placenta in your hands below the vagina and turn it on itself until all the membranes are expelled.

---

**GUIDELINES FOR STARTING IV INFUSION OR GIVING ORAL REHYDRATION SOLUTION (ORS)****Start an IV infusion (two if possible):**

- Use a large-bore needle (16-gauge or largest available).
- Rapidly infuse Ringer's lactate or normal saline at the rate of 1 L in 15-20 minutes.
- Give at least 2 L of fluid in the first hour.

**Note**

*If shock is due to bleeding, aim to replace two to three times the estimated fluid loss.*

**ONLY if unable to start an IV infusion** (for whatever reason), give the woman ORS according to the following guidelines:

- ✓ **If the woman is able to drink**, is conscious, and is not having (or has not recently had) convulsions, give ORS 300-500 mL in 1 hour by mouth.

**Note**

*Unless the woman is fully conscious and alert, do NOT give fluid by mouth.*

- ✓ **If the woman is unable to drink**, is unconscious, or is having (or has recently had) convulsions, give ORS 500 mL rectally over 20-30 minutes, according to the following procedure:

- Fill an enema bag/can with 500 mL of fluid.
- Run water to the end of the tube and clamp off.
- Insert the lubricated tube about 10 cm (3-4 inches) into the rectum.
- Run the water in slowly.

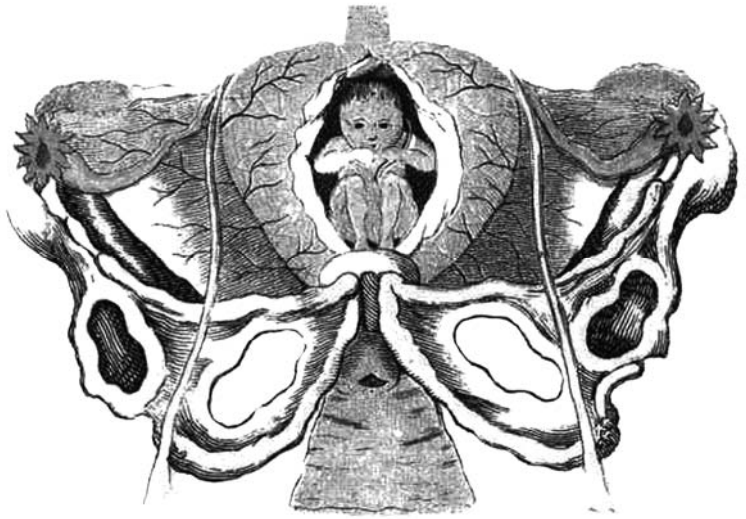
**Note**

*It will take 20-30 minutes for the water to run into the patient. If you run it in too rapidly, she will get abdominal cramps and push the water out.*





# 3 Antenatal Problems



***M** is for the million things she gave me,  
**O** means only that she's growing old,  
**T** is for the tears she shed to save me,  
**H** is for her heart of purest gold,  
**E** is for her eyes, with love-light shining,  
**R** means right, and right she'll always be,*

*Put them all together, they spell **mother**,  
a word that means the world to me.*

*Howard Johnson*

## **Part III: Antenatal problems**

### **Anaemia**

### **Female genital mutilation (FGM)**

### **Fever**

*Malaria*

*Urinary tract infection*

### **Hypertensive disorders in pregnancy**

*Management of mild or severe chronic hypertension*

*Management of pregnancy - induced hypertension*

*Mild pre-eclampsia*

*Management of severe pre-eclampsia and eclampsia*

### **Loss or diminution of foetal movements**

*Foetal death*

*Foetal growth retardation*

### **Malpresentations**

*Breech*

*Transverse*

### **Pregnancy after rape / Rape of pregnant woman**

### **Pregnancy in detention**

### **Pregnancy in teenagers**

### **Prelabour rupture of membranes (PROM)**

### **Sexually transmitted diseases**

*Viral hepatitis*

*HIV/AIDS*

*Gonorrhoea*

*Chlamydia trachomatis*

*Syphilis*

### **Tetanus prophylaxis**

### **Threat of premature delivery / Preterm labour**

### **Twin pregnancy**

### **Vaginal bleeding**

*Abortion*

*Ectopic pregnancy*

*Molar pregnancy*

*Placenta praevia*

*Abruptio placentae*

### **Vaginal discharge**

### **Vitamin A deficiency**

### **Annexes**

**III.A.1-2** *Vaccination and pregnancy*

**III.B** *Vitamin A, Iron and Folic Acid food sources*

## Definition

Diminution below normal values of the erythrocyte count in the circulating blood, measured either as the number of erythrocytes per cubic millimetre or, more often, by the haemoglobin level in g/dl.

Anaemia may be due, among other reasons, to ferrous or folic acid deficiencies.

Folic acid deficiency results from low intake of meat and fresh vegetables, multiple or close pregnancies, alcoholism, or hyperemesis gravidarum (*see page 77*).

A fall in the haemoglobin level during pregnancy is physiological and secondary to an increase in plasma volume. A haemoglobin level of  $\geq 11$ g/dl is considered normal.

## Symptoms and signs

Moderate anaemia: pallor of palms and conjunctiva, dizziness, tachycardia

Severe anaemia: severe palmar and conjunctival pallor associated with:

- breathing frequency of  $\geq 30$  breaths per minute
- fatigue
- breathlessness at rest

## Diagnosis

Anaemia is diagnosed by observation of clinical symptoms and signs, confirmed by haemoglobin level:

- 7-11 g/dl: moderate anaemia
- < 7 g/dl: severe anaemia

Haemoglobin testing kits suitable for use at primary health-care level may be ordered from the standard ICRC medical list:

- haemoglobin colour scale, starter kit (WHO)
- haemoglobin test strips, refill kit 2,000 strips (WHO)

## Treatment

Iron and folate tablets: 60 mg iron with 400 mcg folic acid (*this is often lacking in women's diet*)

Preventive treatment: 1 tab daily for three months

Curative treatment: 1 tab twice daily for three months

Remember that malaria and worms can also cause anaemia, so it is important to take preventive measures, or to give curative treatment if necessary, for those conditions as well.

## Management

**Refer the woman in case of severe anaemia** (*see page 115*).

Depending on her nutritional status and the local availability of food she can afford to buy, advise her on what she should eat (*see annex III.B, page 196*).

# FEMALE GENITAL MUTILATION (FGM)

## **WHO CLASSIFICATION OF FEMALE GENITAL MUTILATION**

FGM encompasses all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs whether for cultural or any other non-therapeutic reasons.

**The different types of female genital mutilation known to be practised are as follows:**

- Type I** Excision of the prepuce, with or without excision of part or all of the clitoris
- Type II** Excision of the clitoris with partial or total excision of the labia minora.
- Type III** Excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (infibulation).
- Type IV** Unclassified : includes pricking, piercing or incising of the clitoris and/or labia; stretching of the clitoris and/or labia; cauterization by burning of the clitoris and surrounding tissue; scraping of tissue surrounding the vaginal orifice (angurya cuts) or cutting of the vagina (gishiri cuts); introduction of corrosive substances or herbs into the vagina to cause bleeding or for the purposes of tightening or narrowing it; and any other procedure that falls under the definition of female genital mutilation given above.

### Antenatal complications in presence of FGM

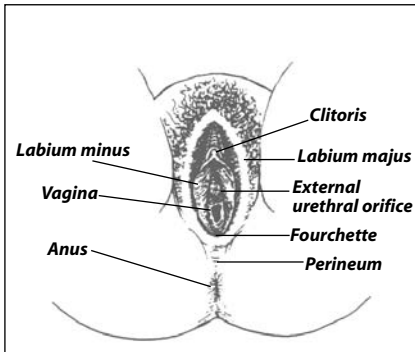
- **Antepartum haemorrhage:**  
FGM can hinder appropriate assessment and management
- **Pre-eclampsia**  
Difficulty in evaluating proteinuria because urine is contaminated by vaginal secretions
- **Spontaneous abortion**  
A tight introitus may lead to serious infection due to retention of products in the vagina
- **Urinary tract infection**  
Difficulty of obtaining a clean sample of urine because contaminated by vaginal secretions
- **Vaginal infection**  
A tight opening (1 cm or less) will:
  - hinder pelvic examination
  - hamper the taking of the necessary samples for testing
  - prevent appropriate treatment

### **Management**

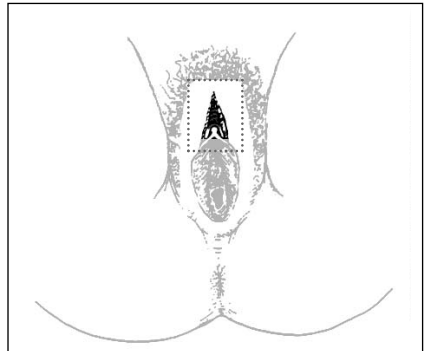
During the antenatal period, refer the pregnant woman every time she presents a complication that makes it necessary to open up the scarring.

Depending on the type of FGM and the proximity of health services, it is also better to refer the pregnant woman for delivery in order to avoid possible complications (see *WHO recommendations, page 99*).

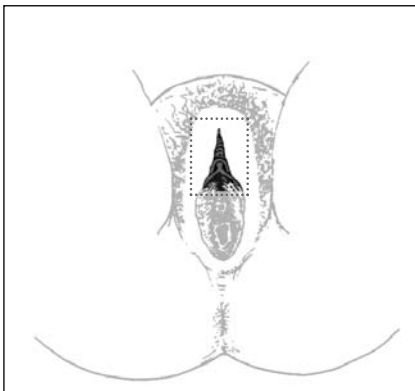
Structure of normal external female genitalia



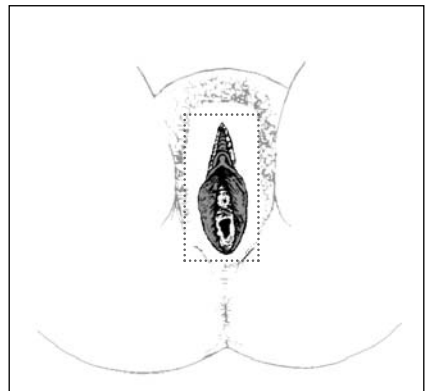
Excision of the prepuce (the fold of skin above the clitoris) with the tip of the clitoris.



Type 1: May consist of removal of the prepuce without damage to the clitoris.



Type 2: Excision of the prepuce and clitoris.



Type 3: Excision of the prepuce, clitoris and labia minora.

## **WHO recommendations for the antenatal period**

Prevention of FGM and management of its complications should be included in antenatal care.

During the antenatal period, women and couples should be provided with appropriate information about the timing of opening up the scar tissue of type III FGM, and possible complications in labour and at delivery.

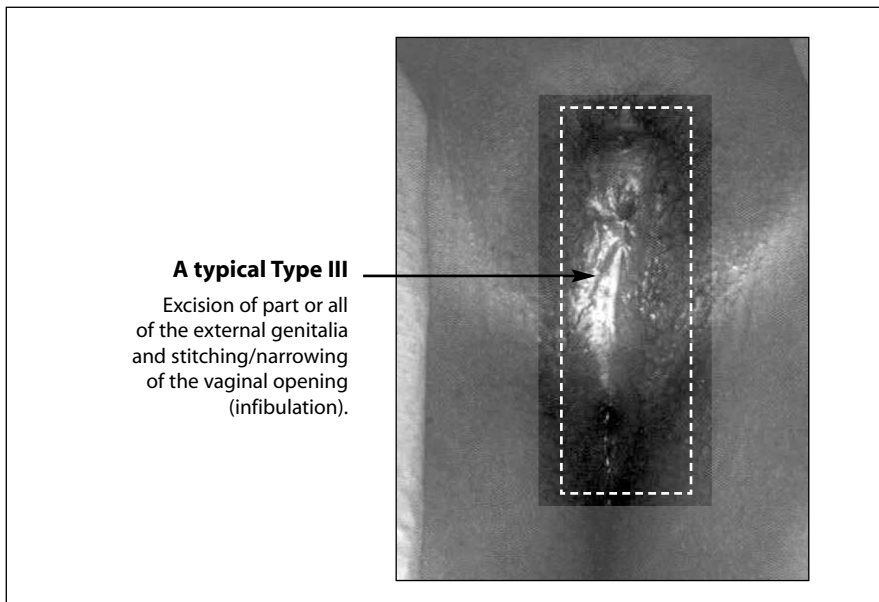
It is essential to develop a rapport with clients and obtain consent before attempting to undertake a physical examination.

The introitus should be examined at the first antenatal visit to establish the extent of mutilation.

Local guidelines for antenatal opening up of type III FGM should be established, taking into account the prevalence of type III, the travelling distances involved and access to medical and midwifery services.

Midwives and doctors should receive adequate training in safe techniques for opening up the scar tissue of type III FGM and a tight introitus.

Midwives and doctors should receive training in psychosexual counselling and communication skills so that women and couples can be given education and counselling on the health consequences of FGM.



## **MALARIA**

### **Definition**

A communicable disease caused by a parasite called plasmodium (four species: vivax, malariae, ovale, falciparum) and transmitted by the mosquito.

### **Symptoms and signs**

- Fever
- Chills/rigors
- Headache
- Muscle/joint pain
- Enlarged spleen
- Anaemia

### **Risks for the foetus**

- Spontaneous abortion
- Prematurity
- Foetal growth retardation
- Foetal death
- Congenital malaria (rare)
- Neonatal death

### **Effects of malaria in newborns<sup>15</sup>**

#### Maternal infection:

- Low birth weight
- Pre-term delivery

#### Placental infection:

- Low birth weight
- Increased risk of anaemia at two months of age
- Increased risk of malaria at four to six months of age

It is much more common to find parasitized red cells in the placenta than in the mother's peripheral circulation.

#### Congenital:

- Neonatal fever
- Neonatal death
- Fever, anaemia, splenomegaly at three to eight weeks of age.

---

<sup>15</sup> Philip R. Fischer, «Malaria and newborns», *Journal of Tropical Pediatrics*, Vol. 49, No. 3, June 2003

## **MALARIA** (contd.)

### **Diagnosis**

Rapid detection test (RDT) (see the ICRC Malaria Guidelines: two tests are available on the ICRC standard list).

The “gold standard” test for diagnosing malaria remains the blood smear (thick/thin blood examination), but this is rarely available at health-centre level.

#### **Note**

Pregnant women who live in high-transmission areas, and who therefore have a degree of pre-existing immunity, often develop asymptomatic infections. In many asymptomatic cases, few or no parasites may be detected in the peripheral blood although the placenta is heavily infected. Thus a negative blood film or RDT in a pregnant woman does not rule out malaria; always treat the woman if you suspect malaria.

### **Preventive measures**

For all protective measures against exposure to the mosquito, see the ICRC Malaria Guidelines.

#### Prophylaxis:

Fansidar (500 mg sulfadoxine with 25 mg pyrimethamine per tablet: SP)

- second trimester, 3 tablets, single dose

- third trimester, 3 tablets, single dose

If the pregnant woman can attend antenatal consultations more regularly, give her the first dose (3 tablets) after 16 weeks, because it is contraindicated before, and another two doses at least one month apart.

### **Treatment**

#### **Note**

«Pregnant women are more attractive to mosquitoes than are non-pregnant women or children. During pregnancy, the acquired anti-malaria immunity of a woman residing in a malaria-endemic area is decreased. The result of these immune modifications is that not only do pregnant women get more malaria, they also get sicker when they get malaria.» (“Malaria and newborns”, op. cit.).

Thus malaria prophylaxis during pregnancy is highly recommended, as well as immediate treatment in case of malaria attack, **according to the national guidelines.**



**MALARIA/Treatment** (contd.)

Some drugs are potentially toxic to the foetus and must be discarded:

	NOT DURING FIRST TRIMESTER OF PREGNANCY	NOT DURING PREGNANCY	NOT LAST FOUR MONTHS OF PREGNANCY
<b>Artesunate</b>	●		
<b>Amodiaquine</b>	● *		
<b>Artemether</b>	●		
<b>Sulfadoxine pyrimethamine</b> (Fansidar)			
<b>Sulfalene pyrimethamine</b> (Metakelfine)	●		
<b>Mefloquine</b> (Lariam, Mephaquine)	●		
<b>Sulfadoxine pyrimethamine mefloquine</b> (Fansimef)	●		
<b>Halofantrine</b> (Halfan)		●	
<b>Doxycycline</b> (Vibramycin)			●
<b>Artemether lumefantrine</b> (Riamet, Coartem)		●	
<b>Atovaquone proguanil</b> (Malarone)		●	

\* If combined with artesunate.

**MALARIA/Treatment** (contd.)**ANTIMALARIAL DRUGS**

<b>TYPE OF DRUGS</b>	<b>QUININE *</b>	<b>CHLOROQUINE *</b>	<b>PROGUANIL *</b>
		(Chloroquine, Nivaquine Resochine, Aralen, Agaquin, Serviquin, etc....)	(Paludrine)
<b>Presentation</b>	<b>tab, amp.iv</b> (different dosages)	<b>tab (100 ou 150 mg base)</b> <b>and syrup</b>	<b>tab. 100 mg</b>
<b>Main side effects</b>	<b>Tinnitus,</b> <b>rarely giddiness,</b> <b>nausea, vomiting</b> <b>Hypoglycemia</b>	<b>Visual</b> <b>Gastro-intestinal disorders</b> <b>Pruritis, Dreams, etc.</b> <b>iv/im : risk of shock</b>	<b>Mouth ulcers,</b> <b>Gastric intolerance</b>
<b>Prophylaxis</b>	<b>0</b>	<b>Adult: 100 mg/d (6d/7)</b> <b>or 300 mg /week</b>	<b>&gt;12 years: 200 mg/d</b>
<b>Curative dosage</b>	<b>8-10 mg/kg/8 h.</b> <b>(max. 1'800 mg/24H)</b>	<b>10 mg/kg/day</b> <b>during 3 days</b>	<b>0</b>
<b>Contraindications</b>	<b>None</b>	<b>Compromised</b> <b>liver function</b> <b>Psoriasis</b>	<b>0</b>

\* no contraindication during pregnancy

---

## **URINARY TRACT INFECTION**

### **Definition**

Infection at any level of the urinary tract from renal calyces to urethral meatus.  
Urinary tract infection occurs very frequently in pregnant women (*see pages 78 & 92*).

### **Diagnosis**

On the basis of clinical signs and urine test strip (leucocytes and/or nitrates positive).

### **Symptoms and signs**

#### Cystitis:

Dysuria, abdominal pain  
Increased frequency and urgency of urination  
Retropubic/suprapubic pain

#### Pyelonephritis:

Same as cystitis, plus fever/chills  
Low back pain  
Anorexia, nausea, vomiting

### **Treatment**

***If there is any doubt it is always better to treat.***

#### Cystitis:

Amoxycillin 500 mg by mouth 3 times/day for 3 days

#### Pyelonephritis:

The pregnant woman must be referred for IV treatment

### **Management**

It is important to bear in mind that urinary tract infection which is not properly treated can lead to premature contractions and hence premature birth.

It is also important for a pregnant woman to drink at least two litres of water per day in order to flush out the urinary tract.

# HYPERTENSIVE DISORDERS IN PREGNANCY

SYMPTOMS AND SIGNS TYPICALLY PRESENT	SYMPTOMS AND SIGNS SOMETIMES PRESENT	PROBABLE DIAGNOSIS
Two readings 4 hours apart of systolic blood pressure $\geq 140$ and/or diastolic blood pressure $\geq 90$ mmHg before 20 weeks of gestation		<b>Mild chronic hypertension</b> <i>(management: see next page)</i>
Two readings 4 hours apart of systolic blood pressure $\geq 160$ and/or diastolic blood pressure $\geq 110$ mmHg before 20 weeks of gestation		<b>Severe chronic hypertension</b> <i>(management: see next page)</i>
<ul style="list-style-type: none"> <li>• Two readings 4 hours apart of systolic blood pressure <math>\geq 140</math> and/or diastolic blood pressure <math>\geq 90</math> mmHg after 20 weeks of gestation</li> <li>• No proteinuria</li> </ul>	<b>In this case there may be no symptoms and the only sign may be hypertension</b>	<b>Pregnancy-induced hypertension</b> <i>(management: see next page)</i>
<ul style="list-style-type: none"> <li>• Two readings 4 hours apart of systolic blood pressure <math>\geq 140</math> and/or diastolic blood pressure <math>\geq 90</math> mmHg after 20 weeks of gestation</li> <li>• Proteinuria up to 2+</li> </ul>	For more information on symptoms and signs, (see page 150)	<b>Mild pre-eclampsia</b> <i>(management: see page 151)</i>
<ul style="list-style-type: none"> <li>• Systolic blood pressure <math>\geq 160</math> and/or diastolic blood pressure <math>\geq 110</math> mmHg after 20 weeks of gestation</li> <li>• Proteinuria 3+ or more</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Headache</b> (increasingly frequent, unrelied by regular analgesics)</li> <li>• <b>Blurred vision</b></li> <li>• <b>Oliguria</b> (passing less than 400 mL urine in 24 hours)</li> <li>• <b>Upper abdominal pain</b> (epigastric pain or pain in right upper quadrant)</li> <li>• <b>Pulmonary oedema</b></li> </ul>	<b>Severe pre-eclampsia</b> <sup>16</sup> <i>(management: see page 151)</i>
<ul style="list-style-type: none"> <li>• Convulsions</li> <li>• Systolic blood pressure <math>\geq 140</math> and/or diastolic blood pressure <math>\geq 90</math> mmHg after 20 weeks of gestation</li> <li>• Proteinuria 2+ or more</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Coma</b> (unconscious)</li> <li>• <b>Other symptoms and signs of severe pre-eclampsia</b></li> </ul>	<b>Eclampsia</b> <i>(management: see page 151)</i>

<sup>16</sup> If a woman has any one of the symptoms or signs listed under severe pre-eclampsia, diagnose severe pre-eclampsia.

## **MANAGEMENT OF MILD OR SEVERE CHRONIC HYPERTENSION**

- Recommend additional periods of rest.
- High levels of blood pressure maintain renal and placental perfusion in chronic hypertension; reducing blood pressure may reduce perfusion. Blood pressure should not be brought down below its pre-pregnancy level (if this is known).  
There is no evidence that aggressive treatment to bring blood pressure down to normal levels improves either foetal or maternal outcome.
  - ✓ If blood pressure is  $\geq 160$  and/or  $\geq 110$  mmHg, treat with **hydralazine**.  
**Give 5 mg IV** slowly every five minutes until blood pressure is lowered. Repeat hourly as needed, or give **hydralazine 12.5 mg IM** every two hours as needed.  
The aim is to achieve diastolic blood pressure of 85-100 mmHg<sup>17</sup> in order to prevent cerebral haemorrhage. Follow with treatment by methyldopa (see below).
  - ✓ If blood pressure is  $\geq 140$  and/or  $\geq 90$  mmHg, treat with **methyldopa**.  
**Give 250 mg by mouth three times per day**
- Monitor once a week and adapt management in accordance with findings and/or complaints. Remember that this condition may cause foetal growth retardation.
- Treatment in case of mild hypertension is controversial.

## **MANAGEMENT OF PREGNANCY-INDUCED HYPERTENSION**

Monitor once a week and adapt management in accordance with findings and/or complaints (always search for proteinuria).

---

<sup>17</sup> There are two sets of guidelines, one recommending diastolic blood pressure between 85 and 90 mmHg and the other between 90 and 100 mmHg. Studies are ongoing.

## **MILD PRE-ECLAMPSIA**

### **Definition**

Hypertension of  $\geq 140$  or  $\geq 90$  mmHg (occurring after 20 weeks of gestation) with proteinuria (1 or 2+, may appear later).

When measuring the mother's blood pressure, ensure that she is not lying in a position that causes compression of the vena cava (see page 75). This means that she should be in a seated or semi-seated position, especially in the last months of pregnancy, and not in left lateral decubitus because this can lead to underestimation of blood pressure.

### **Risk factors**

- Chronic hypertension
- Multiple pregnancy
- Primiparity
- Family or personal history of pre-eclampsia

### **Symptoms and signs**

Mild pre-eclampsia often has no symptoms

- Oedema of hands and face
- Generalized oedema
- Epigastric pain
- Weight gain
- Headache
- Blurred vision
- Oliguria
- Nervousness, agitation
- Hyperreflexia
- Trouble of consciousness state

Oedema of the feet and lower extremities is not considered to be a reliable sign of pre-eclampsia. It is often due to an increase in plasma volume with impaired venous return in pregnant women (see pages 75 & 92).

### **Diagnosis**

Proteinuria may be detected using urine test strips. Try to obtain a clean sample of urine uncontaminated by blood, infected vaginal secretions or amniotic liquid, which can give a positive test result. However, consider also the symptoms and signs.

Increasing proteinuria, which may be difficult to quantify, is a sign of worsening pre-eclampsia.

### **Risks for the foetus**

- Foetal growth retardation
- Premature birth
- Foetal death
- Early neonatal death

## **MILD PRE-ECLAMPSIA** (contd.)

### **Risks for the mother**

- Severe pre-eclampsia ( $\geq 160$  or  $\geq 110$  mmHg)
- Eclampsia (convulsions)
- Abruptio placentae, clotting failure
- Detachment of the retina
- Cerebral haemorrhage
- Subcapsular haematoma of the liver
- Perinatal death

Some other complications of pre-eclampsia may be difficult to diagnose without access to a laboratory for proteinuria measurement and other blood tests (e.g. HELLP syndrome: Haemolysis, Elevated Liver enzymes and Low Platelets).

### **Preventive measures**

Inform every pregnant woman and her family about the danger signals indicating pre-eclampsia or eclampsia.

Restricting calories, fluid and salt intake does not prevent pregnancy-induced hypertension and may be harmful to the foetus.

The beneficial effects of aspirin, calcium and other agents in preventing pregnancy-induced hypertension have not yet been proved.

Encourage the pregnant woman to take additional periods of rest.

### **Treatment and management**

To help in making the decision whether to refer or not, it is better to take blood pressure after the pregnant woman has been at rest for a while, and every 15 minutes over a 4-hour (or at least 2-hour) period.

Once the diagnosis of pre-eclampsia is established, refer the woman unless delivery is imminent and blood pressure is under control.

## **MANAGEMENT OF SEVERE PRE-ECLAMPSIA AND ECLAMPSIA**

Refer the pregnant woman as soon as possible after giving the loading dose of magnesium sulfate (*see page 108 for MgSO<sub>4</sub> schedule*).

All cases of severe pre-eclampsia and eclampsia should be managed actively and in the same way, with the exception that delivery should occur:

- within 12 hours of the onset of convulsions in eclampsia
- within 24 hours of the onset of symptoms in severe pre-eclampsia

Remember that MgSO<sub>4</sub> is an anticonvulsive drug, but one of its secondary effects is to lower blood pressure. So in cases where referral is deferred and systolic blood pressure is still  $\geq 160$  mmHg or diastolic blood pressure  $\geq 110$  mmHg after MgSO<sub>4</sub> treatment, give also an anti-hypertensive drug (*see schedule of hydralazine treatment, page 149*) in order to keep diastolic blood pressure below 110 mmHg.

**One third of women with eclampsia have normal blood pressure. Treat all women with convulsions as if they have eclampsia until another diagnosis is confirmed.**

# LOSS OR DIMINUTION OF FOETAL MOVEMENTS

## **FOETAL DEATH**

### **Definition**

Intrauterine death means death of the product of conception before expulsion or complete extraction.

### **Aetiologies**

- Chromosomal abnormalities
- Abnormalities other than chromosomal
- Infections (e.g. malaria, syphilis, rubella, typhoid)
- Maternal causes (e.g. trauma, pre-eclampsia, alcohol, tobacco, history of foetal death, unfavourable socio-economic conditions)
- Other causes (e.g. cord accident, placenta praevia, abruptio placentae)
- Chronic foetal distress, intrauterine growth retardation

### **Symptoms and signs**

- Foetal movements and foetal heart sounds are undetectable
- Possible additional findings:
- Symptoms of pregnancy gradually disappear
  - Symphysis-fundal height decreases, uterus decreases in size

### **Diagnosis**

Symptoms and signs give a hint for the diagnosis of foetal death, which can be confirmed by loss of hearth tones or ultrasound.

### **Treatment**

Ask the woman when she ceased feeling foetal movements, and await spontaneous onset of labour during the following four weeks.

Reassure the woman that in 90% of cases the foetus is spontaneously expelled during this period with no complications.

The main complication which may occur (4% of all cases) after four to six weeks of foetal death is coagulopathy in the woman, but access to a laboratory is necessary to screen for this.

### **Management**

Refer the woman if there is any additional problem, such as heavy bleeding or failure to deliver after four weeks following foetal death.

For psychological support see next page, but in any case respect the national culture, customs and the desire of the mother.



## Neonatal mortality or morbidity

While general principles of emotional support for women experiencing obstetrical emergencies apply, when a baby dies or is born with an abnormality some specific factors should be considered.

### Intrauterine death or stillbirth

Many factors will influence the woman's reaction to the death of her baby. These include those mentioned above (see page ... and ...) as well as :

- the woman's previous obstetric and life history
- the extent to which the baby was «wanted»
- the events surrounding the birth and the cause of the loss
- previous experiences with death.

### At the time of the event

- Avoid using sedation to help the woman cope. Sedation may delay acceptance of the death and may make reliving the experience later – part of the process of emotional healing – more difficult.
- Allow the parents to see the efforts made by the care givers to revive their baby.
- Encourage the woman/couple to see and hold the baby facilitate grieving.
- Prepare the parents for the possibly disturbing or unexpected appearance of the baby (red, wrinkled, peeling skin). If necessary, wrap the baby so that it looks as normal as possible at first glance.
- Avoid separating the woman and baby too soon (before she indicates she is ready), as this can interfere with and delay the grieving process.

### After the event

- Allow the woman/family to continue to spend time with the baby. Parents of a still born still need to get to know their baby.
- People grieve in different ways, but for many remembrance is important. Offer the woman/family small mementos such as a lock of hair, a cot label or a name tag.
- Where it is the custom to name babies at birth, encourage the woman/family to call the baby by the name they have chosen.
- Allow the woman/family to prepare the baby for the funeral if they wish.
- Encourage locally-accepted burial practices and ensure that medical procedures (such as autopsies) do not preclude them.
- Arrange a discussion with both the woman and her partner to discuss the event and possible preventive measures for the future.

## **FOETAL GROWTH RETARDATION**

### **Definition**

Decreased foetal growth, usually diagnosed as weight below a given percentile for gestational age.

### **Main aetiologies**

#### Foetal causes

- Chromosomal abnormalities
- Other abnormalities
- Infection

#### Maternal causes

- Anaemia
- Malaria
- Nutritional deficit (extreme)
- Pre-eclampsia and hypertension
- Cardiorespiratory problems/diseases

#### Placental causes

- Multiple pregnancy

### **Main risks for the foetus**

- Acute foetal distress
- Foetal death
- Perinatal morbidity or mortality
- Neonatal hypothermia and hypoglycaemia

### **Risk factors**

- History of foetal growth retardation, foetal death or repeated abortion
- Unfavourable socio-economic conditions
- Addiction to smoking
- Insufficient weight gain

### **Symptoms and signs (not very reliable)**

- Poor progress of uterine height and the estimated weight of the foetus
- Decrease in foetal movements because the foetus is in chronic distress

### **Diagnosis**

Symptoms and signs give a hint for the diagnosis, which can be confirmed only by ultrasound.

### **Management**

The mother should rest, lying on her left side as much as possible, and have a sufficient food intake.

Give prophylaxis or treatment for anaemia and malaria.

## Definition

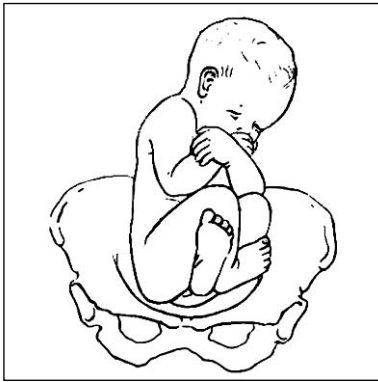
All presentations of the foetus other than the normal one (the foetus head down in the mother's pelvis, in a well-flexed position).

Only breech and transverse lie presentations are discussed here; there are many other malpresentations which are usually diagnosed at the time of delivery.

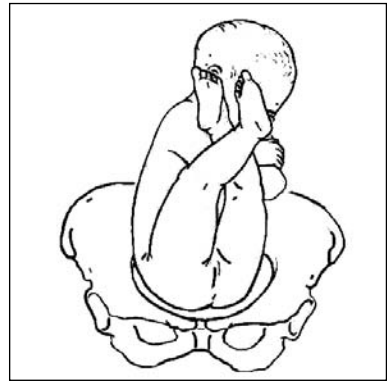
## BREECH PRESENTATION

### Definition

When the buttocks and/or the feet are the presenting parts.



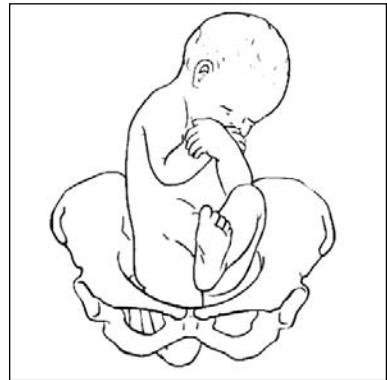
*Complete breech*



*Frank breech*



*Footling presentation*



*Knee presentation*

## **BREECH PRESENTATION** (contd.)

### **Aetiologies**

- Prematurity
- Foetal malformation
- Multiple pregnancy
- Placenta praevia
- Uterine malformation
- Mother pelvic anomalies (e.g. congenital dislocation of a hip)
- Hydramnios or oligoamnios

### **Risks for the foetus in vaginal breech delivery**

- Cord prolapse and/or compression
- Perinatal anoxia or death
- Intracranial haemorrhage
- Nerve lesions or broken neck
- Fractures or dislocations of arms
- Damage to abdominal organs
- Testicular haematoma or torsion

### **Management**

Advise the mother to deliver in hospital because of the risks for the foetus if she is not attended by an experienced person.

Whether or not to perform a caesarean section will be decided by the hospital team in each specific situation.

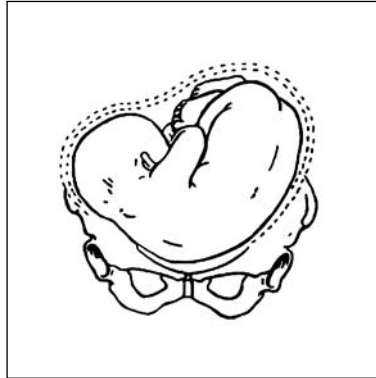
If the foetus is dead, a caesarean will not be performed.

*Look at page 158 for more information.*

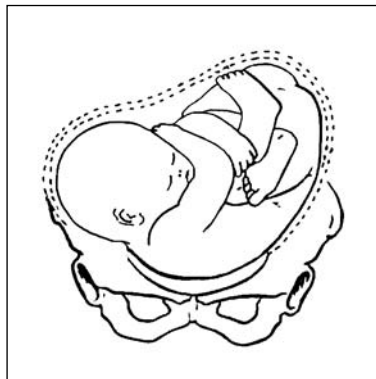
## **TRANSVERSE LIE PRESENTATION**

### **Definition**

When the long axis of the foetus is transverse. The shoulder is typically, but not always, the presenting part.



*Shoulder presentation, dorso-anterior.*



*Shoulder presentation, dorso-posterior.*

## **TRANSVERSE LIE PRESENTATION** (contd.)

### **Aetiologies**

- Hydramnios
- Multiparity or atonic uterus
- Praevia obstacle
- Second twin
- Uterine malformation
- Pelvic anomaly

### **Risks for the foetus**

Cord prolapse

Foetal death

### **Management**

Vaginal delivery is not possible and the mother has to be referred for caesarean section which will be performed even if the foetus is dead.

### **General management in both situations**

#### **• Do not attempt external version**

This procedure involves a degree of risk for the foetus and the mother. It can be done only by a skilled person in a hospital where a caesarean section can be performed in the event of any complication, such as abruptio placentae.

- **Never rupture the membranes artificially** because of the risk of cord prolapse. This will be done, if necessary, only at the hospital.
- Remember that foetal presentation may change throughout pregnancy until the onset of labour.

## **PREGNANCY AFTER RAPE / RAPE OF PREGNANT WOMAN**

In your work in situations of war or civil strife you will often encounter cases of women who have been raped. Here we will discuss management of women coming to antenatal consultations who are already pregnant, and not the period immediately following the rape of a woman who was not already pregnant. In accordance with ICRC guidelines, management of such cases will depend on national health policies and standards. At present the ICRC's operational framework is based on the WHO publication «Clinical management of survivors of rape». (See *bibliography*)

### **Psychological approach**

Although the approach to caring for a pregnant victim of rape is naturally the same as the usual approach for any pregnant woman (see *pages 94, 95 & 102-104*), there are also some specific points to be considered.

These points are briefly outlined here, but for further information see the WHO guidelines mentioned above.

A woman should not be questioned in this regard: it is her choice whether or not to say that she has been raped.

When a woman says that she has been raped, the health professional taking care of her should encourage discussion and establish a climate of confidence without making judgements or making her feeling guilty. This means giving her time to speak, accepting her silences, and perhaps following the physical consultation by a further period of discussion.

Remember that confidentiality must be respected. It is also important to determine what information is needed to care for a woman, without obliging her to say any more.

### **What must be considered in case of:**

#### ***Pregnancy following rape***

##### The woman's history in relation to the rape:

- Whether it was her first intercourse, and her age
- The circumstances of the rape
- Did she try to terminate the pregnancy?
- The physical consequences of the rape

##### Problems specific to her situation:

- *Post-traumatic manifestations*
  - insomnia
  - nightmares
  - muteness
  - emotional lability, etc.

***Pregnancy following rape*** (contd.)

Problems specific to her situation:

- *The social consequences of the rape for the woman*
  - fear of reprisals
  - was she already married, or will she be married to the rapist?
  - has she been cast out by her family or community?
  - any other problem relating to her culture and/or religion
- *The consequences for her baby's future*
  - does the mother want to take care of the baby or not?
  - taking into account her culture, religion, financial resources, etc., what social choices are open to her in regard to the child's upbringing?

***Rape of pregnant woman***

The woman's history in relation to the rape:

- The circumstances of the rape
- The physical consequences of the rape for her and her baby (miscarriage, intrauterine foetal death or any other condition which will make her lose her baby)

Problems specific to her situation

- *Post-traumatic manifestations*
  - insomnia
  - nightmares
  - muteness
  - emotional lability, etc.
- *The social consequences of the rape for the woman*
  - fear of reprisals
  - is her husband aware of the rape, and what are the repercussions for their relationship?
  - was the child desired or not?
  - does she want to terminate the pregnancy, and is it possible?
  - has she been cast out by her family or community?
  - any other problem relating to her culture and/or religion
- *The consequences for her baby's future*
  - does the mother want to take care of the baby or not?
  - taking into account her culture, religion, financial resources, etc., what social choices are open to her in regard to the child's upbringing?

Depending on the local circumstances, the culture and the religion of the woman, the national health services and policies, etc., it may or may not be possible to help the woman concerned. In any event, try to do your best.

Last but not least, there are usually more women than men giving antenatal consultations, but obviously in these circumstances it is always better to have a woman.



## **Special procedures in antenatal consultations**

If the fact that the woman has been raped is overlooked, she is like any other pregnant woman and will need the same care (for any problems, see the corresponding section in this document).

Remember that this document is intended for the primary health care level, which means that there will be no laboratory and if necessary the woman will have to be referred.

*Any special procedures during the consultation will depend on whether or not:*

- There is a national policy on rape
- The woman had a consultation specifically concerning the rape before her first antenatal consultation
- The woman has some genital injury caused by the rape, especially if she had undergone female genital mutilation

*The special procedures are:*

- To take steps to avoid the risk of sexually transmitted diseases (*see pages 168-174*)
- To monitor the healing of any physical injury(ies) caused by the rape
- To check that the woman is immunized against tetanus (*see pages 175-177*)

## **Management**

Refer pregnant rape victims whenever you feel this is necessary, depending of course on the health services available to her under the national health policy on rape.

For any other problem about the pregnancy itself, see the recommendations for management given in the section concerned.

If psychological support is available, always propose it.

# PREGNANCY IN DETENTION

---

As prison visits are one of the ICRC's main activities, delegates will sometimes encounter pregnant women prisoners.

If the fact of being pregnant is the only aspect considered, a woman in prison is like any other pregnant woman.

Being in detention, however, brings its own problems and several matters have to be taken into consideration in order to keep a detained pregnant woman in good health.

Here we will not discuss the general rights of women prisoners with regard to special conditions of detention (see ICRC Prison Health Manual), but focus on the specific services that should be available to a detained pregnant woman.

## **Diet**

A pregnant woman does not have to eat for two, but it is important that she have a varied diet divided into at least three meals during the day. This will allow her to absorb the different nutrients such as carbohydrates, fats, proteins and micro-nutrients essential for good foetal development and enable her to avoid feeling weak or suffering from hypoglycaemia.

The diet must be adapted to the circumstances in the country concerned.

## **Work**

Pregnancy is not a disease or a handicap as long as there are no complications. Nevertheless, heavy work and insufficient rest will put foetal and maternal health at risk. The woman should be allowed to:

- move around rather than remaining in the same position for hours
- rest in a comfortable position during her daily work, if only for a few minutes.

## **Antenatal care**

A detained pregnant woman should have access to the same level of health services as any other pregnant woman in the outside community, which means:

- having as many antenatal consultations as necessary, according to her obstetric situation, inside or outside the prison
- being referred if necessary
- if she is to deliver in prison, delivering in the same conditions as if she were at home (privacy, with a traditional birth attendant or a midwife and, if possible, at least one member of her family present).

## **Psychological health**

By the very fact of being in prison and thus deprived of freedom, no detainee is in a good psychological state.

In this situation the detainee can be afraid of many things, one of the main fears often being violence in prison. A pregnant woman feels more vulnerable, and is afraid of having medical problems and of the difficulties involved in obtaining appropriate medical attention.

While female prisoners should always be completely separated from men during their detention, pregnant women, who are also worried about their babies, require even more protection and assistance.

Pregnancy is a special period in a woman's life. The pregnant woman prisoner needs support from her family, so family visits should be encouraged and allowed with increased frequency.

# PREGNANCY IN TEENAGERS

---

What is the meaning of the term “teenager”?

In some countries adolescence is not recognized as a special time of life. Defining the beginning and the end of adolescence is controversial. Here we define adolescence as starting with the first menstrual periods (menarche) and ending with complete growth and pelvic development.

## **What problems relating to war or civil strife are specific to adolescent girls?**

Violence and insecurity bring with them:

- the fear of being killed, abducted or sexually abused
- the need to adapt to the situation by changing behaviour, especially as regards bathing, toilet facilities, lack of privacy and the danger involved in seeking privacy, and lack of medical care and protection
- being a young woman in a conflict situation considerably increases vulnerability in daily life and in contacts with men

Poverty, which can lead to:

- trading of sex for food or washing products
- elopement
- early marriage

Loss of social points of reference due to:

- disruption of schooling
- lack of family support, especially if the family has been dispersed or some members have disappeared
- the risk of being orphaned
- lack of friendship or community support
- bad behaviour on the part of adults, who are no longer good role models

In short, this kind of situation deeply undermines the psychological well-being and physical integrity of adolescent girls.

**During antenatal consultations,** teenagers will be treated in the same way as other women, but two further matters have to be taken into consideration.

**A specific approach is necessary**

Even if the monitoring of the pregnancy (see page ..) is carried out in the same way as for older women, special attention has to be given to young girls who are pregnant as they can be shy and frightened, or feel guilty and think they are being censured for being pregnant at their age.

Therefore staff, preferably female, dealing with teenagers have to create a climate of confidence by being patient and accepting silences and without making the girl feel guilty.

The risk is that if the teenager does not feel comfortable during her antenatal consultation she will not come back.

**There is an increased risk of some complications of pregnancy in teenagers:**

- Sexually transmitted diseases, because most often they have had sexual relations with men older than themselves
- Hyperemesis gravidarum
- Pre-eclampsia
- Delivery by caesarean necessitated by cephalo-pelvic disproportion, because a teenager's pelvis is not yet completely developed (risk of vesico- or recto-vaginal fistula)

**Management**

Refer the teenage girl for delivery.

# PRELABOUR RUPTURE OF MEMBRANES (PROM)

## Definition

Rupture of membranes before the beginning of labour; this can occur either when the foetus is mature (at term,  $\geq 37$  weeks) or immature (preterm,  $< 37$  weeks).

## Risk factors

- Vaginal or cervical infection
- Hydramnios
- Contractions
- Cervical incompetence

## Diagnosis

The condition will be diagnosed on the basis of signs reported by the pregnant woman, her medical history and the type of vaginal discharge observed.

If no discharge is present:

- A gush of fluid may be induced by asking the woman to cough.
- A vaginal pad is placed over the vulva and examined (aspect and smell) one hour later (if the woman has no premature contractions, she can walk about during this hour).

**Do not perform a digital vaginal examination, as it does not help establish the diagnosis and can introduce infection.**

Rule out urinary incontinence by observing the colour, smell and origin (urinary or vaginal) of the discharge, and also by taking medical history into account (e.g. vesico-vaginal fistula or multiparity with history of urine loss).

## Risks for the foetus

- Chorioamnionitis
- Cord prolapse or compression
- Premature birth
- Complications due to oligoamnios
- Abruptio placentae
- Foetal or perinatal death

## Risks for the mother

- Abruptio placentae, clotting failure
- Chorioamnionitis
- Maternal death due to sepsis

## Treatment and management

If there are premature contractions, hydrate and refer the pregnant woman.

Give antibiotics in order to reduce maternal and neonatal infective morbidity and possibly delay the delivery.

		< 37 weeks	≥ 37 weeks
<b>With signs of infection</b>  ( fever, foul-smelling vaginal discharge )	<b>Contractions</b>	<b>Hydrate</b> the pregnant woman (see annex II.B, page135) <b>Give <u>ampicillin</u></b> 2 g IV every six hours <b>plus <u>gentamicin</u></b> 5mg/kg body weight IV every 24 hours <b>Refer</b> the pregnant woman	<b>Give <u>penicillin G</u></b> 2 million units IV every six hours until delivery <b>or</b> <u>ampicillin</u> 2 g IV every six hours until delivery <b>Wait</b> for the delivery*
	<b>No Contractions</b>	<b>Give <u>ampicillin</u></b> 2g IV every six hours <b>plus</b> <u>gentamicin</u> 5 mg/kg body weight IV every 24 hours <b>Refer</b> the pregnant woman	<b>Give <u>penicillin G</u></b> 2 million units IV every six hours until delivery <b>or</b> <u>ampicillin</u> 2 g IV every six hours until delivery <b>Refer</b> the pregnant woman*
<b>With no signs of infection</b>	<b>Contractions</b>	<b>Hydrate</b> the pregnant woman (see annex II.B, page135) <b>Give <u>ampicillin</u></b> 2 g IV every six hours <b>plus <u>gentamicin</u></b> 5mg/kg body weight IV every 24 hours <b>Refer</b> the pregnant woman	If the membranes have been ruptured for more than 18 hours, <b>give:</b> <u>penicillin G</u> 2 million units IV every six hours until delivery <b>or</b> <u>ampicillin</u> 2 g IV every six hours until delivery <b>Wait</b> for the delivery*
	<b>No Contractions</b>	<b>Give <u>erythromycin</u></b> 250 mg by mouth three times per day <b>or</b> <u>amoxicillin</u> 500 mg by mouth three times per day <b>Refer</b> the pregnant woman	If the membranes have been ruptured for more than 18 hours, <b>give:</b> <u>penicillin G</u> 2 million units IV every six hours until delivery <b>or</b> <u>ampicillin</u> 2 g IV every six hours until delivery <b>Refer</b> the pregnant woman*

**If the pregnant woman shows signs of sepsis** (fever, foul-smelling vaginal discharge, low blood pressure, signs of shock) **add to ampicillin and gentamicin IV:**  
 - **metronidazole** 500 mg IV every 8 hours.

\***Consider referral** of a pregnant woman presenting PROM at ≥ 37 weeks of pregnancy:

- **with signs of infection if:**
  - no delivery within 6 hours
- **with no signs of infection if:**
  - no delivery within 12 hours
  - no delivery within 6 hours if membranes already ruptured >18 hours

# SEXUALLY TRANSMITTED DISEASES

---

## **VIRAL HEPATITIS**

There are five different types of viral hepatitis (hepatitis A, B, C, D and E), which cannot be differentiated clinically. Specific serological tests are necessary.

Hepatitis A and E are spread by the faecal-oral route, while the other three (B, C and D) are transmitted via the blood (intravenous drugs, blood transfusion, delivery or sexual activity).

### **Hepatitis A**

Vertical transmission to the foetus does not occur, whatever the stage of maternal infection. There is a risk of premature delivery in case of infection during the third trimester. Immunization by inactivated vaccine can be performed during pregnancy (refer to the national health policy and standards).

### **Hepatitis E**

This is rare, but the risk of developing fulminating hepatitis is ten times higher during pregnancy. Epidemics have been observed.

## **HEPATITIS B**

The virus persists in about 10% of infected immunocompetent adults and in as many as 90% of infants infected perinatally, depending on the ethnic group of the mother.

Maternal morbidity and mortality are higher in developing countries, where fulminating hepatitis is five times more frequent.

Approximately 25% of all patients with chronic hepatitis will progress to cirrhosis, and about 20% of those with cirrhosis will develop hepatocellular carcinoma.

### **Symptoms and signs**

- Acute hepatitis B is often anicteric and asymptomatic
- Severe illness with jaundice may occur
- Acute liver failure may develop

### **Risks for the foetus**

- Premature birth when the mother contracts hepatitis during the second or third trimester of pregnancy
- Transplacental transmission is very weak
- Transmission of the virus occurs more often during delivery

### **Diagnosis**

Based on serology.

### **Treatment**

Curative: only symptomatic

Preventive: inactivated vaccine is not contraindicated during pregnancy (refer to the national health policy and standards)



### **Management**

Reasons for referring the mother:

- for confirmation of the diagnosis by serological testing
- for delivery, if it is possible for the newborn to receive passive and active immunization (hepatitis B immunoglobulins and vaccine) before breastfeeding

In developing countries, breastfeeding of the baby even without immunization is better than giving any other animal or artificial milk.

Remember to arrange for serological testing, if possible, of the man with whom the woman has sexual relations so as to give appropriate advice.

### **HEPATITIS C**

Hepatitis C is responsible for 5% of hepatitis cases and 50% of chronic hepatic cases. 95% of people suffering from hepatocellular carcinoma are carriers of hepatitis C antibodies.

#### **Symptoms and signs**

75% of cases are asymptomatic

25% show non-specific symptoms such as fever, icterus, faintness and abdominal pain

#### **Diagnosis**

Based on serology.

#### **Treatment**

There is no treatment for hepatitis C and no vaccine at this stage.

#### **Risks for the foetus**

- In cases of chronic maternal infection or acute hepatitis during the third trimester, the risk of vertical transmission is about 5%.
- Maternal HIV infection favours hepatitis C transmission
- Infant hepatitis is rare but leads to a chronic asymptomatic condition

#### **Management**

Give advice on how to prevent further contamination (e.g. no blood donation).

Breastfeeding is not contraindicated.

## ***HIV/AIDS - HUMAN IMMUNODEFICIENCY VIRUS/ ACQUIRED IMMUNE DEFICIENCY SYNDROME***

### **Definition**

HIV infection leads, after a long, silent incubation period, to a progressive deficiency of the immune system (attested by the declining number of CD4 lymphocytes). This, after some years, leaves the patient open to tuberculosis reactivation and to a variety of opportunistic infections such as parasitic, fungal and viral infections which would not normally cause disease in an immunocompetent person. Certain tumours (lymphomas, Kaposi's sarcoma) and neurological disorders may also occur.

## **HIV/AIDS - HUMAN IMMUNODEFICIENCY VIRUS/ ACQUIRED IMMUNE DEFICIENCY SYNDROME (contd.)**

HIV/AIDS is transmitted:

- by sexual contact (hetero- or homosexual)
- by transfusion of infected blood or blood products
- by contaminated injection or surgical material
- from infected mothers to their infants: mother-to-child transmission (MTCT) (during pregnancy, delivery or breastfeeding)

**Diagnosis:** Based on serology.

### **Risks for the foetus**

Transmission during pregnancy (vertical transmission) or during delivery from a HIV-positive mother occurs in 15 to 30% of cases.

The risk of vertical transmission is increased in the case of premature rupture of membranes (> 4 to 6 hours before delivery).

In order to reduce the risk of transmission during delivery, caesarean section is recommended but of course is not always possible. Furthermore, when the serological status of the mother is not known, caesarean section is seldom performed as a preventive measure.

The infant may be contaminated during pregnancy, during delivery or while breastfeeding.

Apart from the risk of contamination, there are no specific complications for the foetus of an HIV-positive mother.

### **Risks for the mother**

Pregnancy does not influence the evolution of the disease as long as the mother is not in an advanced stage of AIDS.

However, owing to the suppression of her immune response, the mother may present various opportunistic infections.

### **Treatment**

To date there is no vaccine and no curative treatment available for HIV/AIDS.

Anti-retroviral therapy (ARV), a combination of different drugs, may only prolong the asymptomatic phase of the disease.

Comply with the national health policy and standards, if any.

Due to the high level of resistance of HIV to Nevirapine observed, WHO does not recommend any longer the use of Nevirapine taken alone to reduce MTCT.

Various combinations of drugs (including or not Nevirapine) are presently under study and new WHO guidelines will be produced, and sent immediately to all ICRC delegations.

Thanks for keeping in touch with the ICRC Health Unit at Head Quarters before developing or introducing any protocol for MTCT reduction.

### **Management**

If caesarean section is possible, refer the pregnant woman to the hospital.

«*The ICRC's operational framework in regard to HIV/AIDS for victims of armed conflict*» is the official ICRC reference document concerning HIV/AIDS.

## **GONORRHOEA / CHLAMYDIA TRACHOMATIS**

### **GONORRHOEA**

#### **Definition**

Gonorrhoea occurs when the bacterium *Neisseria gonorrhoea* colonizes the epithelial surfaces of the male and female uro-genital tract, conjunctiva, pharynx, rectum or synovium.

Human beings are the only natural hosts of gonorrhoea, which is a sexually transmitted disease.

#### **Symptoms and signs**

- Men: thick yellow urethral discharge
- Asymptomatic infections are much more frequent in women
- Women: vaginal discharge may be observed (as *N. gonorrhoeae* infects the endocervix rather than the vagina, it is less associated with vaginal discharge)
- Dysuria
- Vulvar itching or burning, local oedema
- Salpingitis during the first trimester of pregnancy
- Infections of the pharynx or the rectum, mostly asymptomatic, may result from orogenital or/and genito-anal sexual contact.  
However, the rectum is easily infected by vaginal discharge.
- Children may be infected by sexual abuse or infected fomites and show symptoms of vulvo-vaginitis.

#### **Diagnosis**

History and signs.

Gram-negative bacteria seen by microscopy in purulent discharge.

#### **Risks for the foetus**

- Chorioamnionitis
- Septic abortion
- Premature rupture of membranes
- Premature birth
- Foetal growth retardation
- Gonococcal arthritis possible, but rare
- Neonatal infection during delivery from an infected mother. This can lead to gonococcal conjunctivitis (acute bilateral purulent conjunctivitis), occurring in the first month of life and often in the first week, which is a major cause of blindness.

#### **Risks for the mother**

- Infection of the paraurethral and Bartholin's glands
- Chronic pelvic inflammatory disease
- Infection of the uterus (endometritis) and fallopian tubes (salpingitis) caused by abortion, delivery, or insertion of intrauterine device
- Increased risk of ectopic pregnancy
- Postpartum upper genital tract infection
- Sterility
- Disseminated gonococcal infection: arthritis
- Ocular gonococcal infection (hand-borne autoinoculation), which can lead to blindness

***GONORRHOEA / CHLAMYDIA TRACHOMATIS (contd.)***

**Treatment**

See drugs prescribed on next page.

**Preventive measures**

The major obstacle to gonorrhoea control is the large reservoir of asymptomatic carriers and the frequency of clinically non-specific infections.

Insufficient or inappropriate treatment also increases the incidence of resistance to antibiotics.

The most effective preventive measure is promotion of the use of condoms and of safe sex. Sexual partner(s) should be checked and treated.

No vaccine is available.

**CHLAMYDIA TRACHOMATIS**

**Definition**

Sexually transmitted infection due to the bacterium *Chlamydia trachomatis*.

**Symptoms and signs**

Similar to those of gonococcal infection in men and women.

Males:

- urethritis, epididymo-orchitis
- late sequela: urethral stricture

Females:

- chlamydial cervicitis is often asymptomatic
- possible mucopurulent vaginal discharge

**Risks for the mother**

Endometritis, salpingitis, pelvic inflammatory disease, all of them facilitated by trauma to the cervix caused by abortion, delivery, or insertion of an intra-uterine device.

Symptoms of chlamydial pelvic inflammatory disease are often mild. Patients may present only when the sequelae are irreversible (damage to the fallopian tubes leading to infertility, ectopic pregnancy).

**Risks for the foetus**

The same as for gonorrhoea, even during the neonatal period.

A small proportion of infants develop chlamydial pneumonitis, usually occurring between the ages of six weeks and three months with cough and tachypnoea but no fever.

## **GONORRHOEA / CHLAMYDIA TRACHOMATIS (contd.)**

### **Treatment for gonorrhoea and chlamydia**

Because co-infection with *Neisseria gonorrhoeae* and *Chlamydia trachomatis* is common, it is generally advisable to treat for both when a specific diagnosis cannot be established.

#### For chlamydia

erythromycin: 500 mg orally, 4 times daily for 7 days **or**

amoxycillin: 500 mg orally, 3 times daily for 7 days

#### For gonorrhoea

cefixime: 400 mg orally as a single dose **or**

ceftriaxone: 125 mg by intramuscular injection as a single dose

For gonococcal conjunctivitis: the intramuscular injection above.

Ciprofloxacin is contraindicated in pregnancy.

## **SYPHILIS**

### **Definition**

Sexually transmitted infection caused by *Treponema pallidum* bacteria.

### **Symptoms and signs**

Syphilis is divided into primary, secondary and tertiary stages of the disease.

Primary stage or chancre: after an incubation period of 10 to 70 days (median 21 days)

- A chancre develops at the site of inoculation. This is an ulcerated lesion with a clean base and raised edge which is painless and indurated and does not bleed on contact.
- There is usually a single lesion, on the penis in males and on the cervix or vulva in females, often accompanied by inguinal lymphadenopathy (glands are hard and painless).

If not treated at this stage, the disease will evolve to secondary syphilis. The chancre generally resolves spontaneously over several weeks.

Secondary syphilis: between 3 and 6 weeks after the primary chancre

- Annular lesions on the skin
- Papular, macular or pustular lesions affecting palms and soles without itching
- Lesions often show desquamation
- In moist areas (e.g. perineum, axilla) soft, raised condylomata lata may be seen
- Possible mucous patches or oral ulceration
- May cause fever, malaise, nephritis, hepatitis, generalized lymphadenopathy, meningitis, uveitis.

If treated, the lesions of secondary syphilis resolve after a few weeks. Without proper treatment, the lesions resolve and disappear but the condition leads to tertiary syphilis, usually years later.

## **SYPHILIS** (contd.)

Tertiary syphilis: may present as

- Gumma: painless «punched out» ulcer, mostly cutaneous (can involve bone or, rarely, viscera). Most cases occur within 15 years of first infection
- Cardiovascular disease, with onset typically 30 to 40 years after infection
- Central nervous system disease, 20 to 30 years after infection

### **Diagnosis**

Primary syphilis (chancre) may be misdiagnosed as it resembles other genital ulcerations, but is usually rather typical. *Treponema pallidum* can be seen under the microscope in exsudate taken from the chancre.

### **Risks for the foetus**

Stillbirth, neonatal death, congenital syphilis

### **Congenital syphilis**

The risk for the foetus is highest when the mother presents with primary or secondary syphilis during pregnancy, and diminishes along with the duration of latent syphilis.

Symptoms and signs: bullous rash, anaemia, jaundice, hepatosplenomegaly, foetal growth retardation.

Poor prognosis if signs of congenital syphilis are already apparent at birth.

More commonly, the baby appears normal at birth and then in the first three months develops:

- failure to thrive
- bullous rash with desquamation on palms and soles
- persistent nasal discharge
- anaemia
- hepatosplenomegaly
- pseudoparalysis of one or more limbs

The prognosis is better if signs of congenital syphilis appear during the post-neonatal period.

Late congenital syphilis in children or adolescents corresponds to tertiary syphilis in adults. Manifestations include bone and dental abnormalities and inflammatory lesions of cornea and joints.

### **Treatment**

#### Infection of no more than two years duration

Penicillin benzathine, 2.4 million IU by intramuscular injection in a single dose (because of the volume involved, this dose is usually given as two injections at separate sites)

Alternative for pregnant patients allergic to penicillin:

- erythromycin 500 mg orally, 4 times daily for 14 days

#### Infection of more than two years duration

Same intramuscular injection as above, once weekly for 3 consecutive weeks

Alternative for pregnant patients allergic to penicillin:

- erythromycin 500 mg orally, 4 times daily for 30 days

# TETANUS PROPHYLAXIS

The infectious agent is the anaerobic bacterium *Clostridium tetani*.

The disease occurs when a cutaneous wound becomes infected with the spores of *Cl. tetani*, which turn into tetanus bacilli in the necrosed tissue.

The toxin produced by *Cl. tetani* spreads through the central nervous system and binds to receptors on nerve endings, where it is unaffected by the tetanus antitoxin. It accumulates in the central nervous system and interferes with the release of neurotransmitters, blocking inhibitor impulses. This leads to painful muscular contractions, especially contractions of the masticatory muscles (lockjaw or trismus).

**Neonatal tetanus** can occur when the umbilical cord is severed with a dirty instrument or when solutions contaminated with tetanus spores are used in the care of the newborn infant. It usually gives rise to suckling difficulties, progressing to generalized rigidity and spasms. Mortality is very high (65-90%).

## Tetanus immunoglobulins

Human tetanus immunoglobulins are used to treat injured patients with deep wounds that are more than 24 hours old.

In the absence of any written proof of previous vaccination, it is assumed that the patient has not been vaccinated. In this case, the tetanus vaccine should be accompanied with:

- one dose of human tetanus immunoglobulin (500 IU) by way of prophylaxis; or
- one dose of human tetanus immunoglobulin (6,000 IU) by way of initial treatment should the clinical symptoms of tetanus appear.

## Tetanus vaccines

- Vaccination of adults

Single antigen tetanus toxoid vaccine or double antigen tetanus-diphtheria vaccine

- Vaccination of children

Triple antigen diphtheria-tetanus-pertussis (whooping cough) vaccine or double antigen diphtheria-tetanus vaccine

## Immune response

Since tetanus antitoxins belong to the IgG class, they can easily cross the placental barrier and spread through the blood system and extravascular tissues. They can neutralize tetanus toxin in an infected wound.

### Note

*A small quantity of tetanus toxin is enough to cause tetanus without stimulating the production of antibodies. Persons who have contracted the disease must therefore be vaccinated with tetanus toxoid, either on diagnosis or during their convalescence.*

**Vaccination is the only means of inducing immunity to tetanus toxin.** A person is protected when he has enough antibodies to neutralize the toxin<sup>18</sup>. Tetanus toxoid is 80 to 100 percent effective<sup>19</sup>. Recovery from clinical tetanus does not ensure protection against infection in the future.

The level and duration of immunity increase with the number of toxoid injections.

TETANUS PROPHYLAXIS AT CHILDBEARING AGE OR DURING PREGNANCY		
Dose	When given	Period of protection
TT1	At first contact with women of childbearing age, or as early as possible in pregnancy.	No protection
TT2	At least 4 weeks after TT1	3 years
TT3	At least 6 months after TT2	5 years
TT4	At least 1 year after TT3	10 years
TT5	At least 1 year after TT4	Throughout childbearing years

#### **Transplacental passage of tetanus antitoxin**

- IgG antibodies can pass through the human placenta from mother to child.
- IgG levels rise steadily in the foetus from the fourth month of pregnancy to its term.
- At birth, a baby's antibody titres are identical to and sometimes higher than those of the mother.

#### **Vaccination failures**

Cases of neonatal tetanus have been reported in babies whose mothers said they had been vaccinated.

These situations may be due to:

- An imprecise and undocumented vaccination history
- An unsuitable immunization schedule:
  - if pregnancy is announced too late and a second dose of toxoid is administered too close to term, a mother-to-be cannot develop an adequate immune response.
  - two doses of toxoid protect only 80% of women. It is therefore advisable to administer a third dose so as to secure a sufficient level of protection.
- The weak immunogenic potential of vaccines that are of poor quality or have been improperly stored.
- Over-exposure to the toxin:
  - If the umbilical stump is highly contaminated and the mother has received only two doses of vaccine, a newborn infant might be unable to neutralize an excessively large amount of tetanus toxin.

---

<sup>18</sup> The minimum protective level is 0.01 IU/ml of serum.

<sup>19</sup> If tetanus toxoid is ineffective, production, storage or transport problems may be the cause.



## WHO recommendations

### Prevention of neonatal tetanus

Vaccinating the mother protects the foetus from neonatal tetanus since antitoxins cross the placental barrier.

#### Note

*The policy of the Expanded Programme on Immunization is to start vaccination of mothers-to-be as early in pregnancy as possible so that the second dose is sufficiently far from the date of delivery.*

If a mother has received only two doses of tetanus toxoid during her pregnancy, a third dose should be administered six to 12 months after the first two injections (or, if necessary, when she becomes pregnant again) so that any future children will be better protected.

#### Note

*All women of childbearing age ought to have received five injections of tetanus toxoid.*

### Vaccination of HIV-infected persons against tetanus

**Vaccination with tetanus toxoid**, either in the form of single antigen or combined antigen vaccine, **is advised** for children and adults infected with HIV, **irrespective of any AIDS symptoms**. Any vaccine prepared with inactivated viruses or bacteria may be used as well.

For more information on vaccines for pregnant women, see annexes III.A.1-2

# THREAT OF PREMATURE DELIVERY/PRETERM LABOUR

## Definition

Beginning of labour before term, i.e. when gestation is less than 37 weeks.

**Risk factors**, among others:

- Chorioamnionitis
- Pre-eclampsia
- Foetal growth retardation
- Premature rupture of membranes
- Haemorrhage
- Dilated cervix
- Multiple pregnancy
- Uterine malformations
- Poor nutritional status
- Excessive physical activity
- Addiction to smoking or alcohol

## Diagnosis

Presence of regular uterine contractions (> 3 in a 30-minute period).

**Do not perform a digital vaginal examination, as this can introduce infection.**

Remember that a pregnant woman can present light bleeding due to the opening cervix if she is in labour.

**Risks for the newborn, in case of birth:**

- Neonatal complications due to immaturity
- Infection contracted in utero
- Neonatal death

**Risks for the mother** will depend on the reason for the premature contractions.

Remember that there are prostaglandins in sperm that can facilitate the maturation of the cervix, which causes uterine contractions. Thus intercourse should be prohibited if the pregnant woman has already had some regular and painful contractions during the pregnancy.

## Treatment

It is not possible to do much at primary health care level, except to hydrate the patient by giving her (preferably) oral rehydration salts or water to drink (around one litre in half an hour, followed by one more litre in one hour, especially if the weather is hot). In fact good hydration often helps to reduce the contractions (*see guidelines for rehydration, page 135*).

Treat infection as in the case of prelabour rupture of membranes < 37 weeks of pregnancy (*see page 167*).

## Management

Refer the pregnant woman if anything can be done to stop the contractions or to ensure proper management of the preterm baby.

## Definition

Presence in the uterus of two fetuses rather than one.

**Twin pregnancy, bichorial, diamniotic** →

*The second foetus is not shown in order to clearly demonstrate that each twin develops within its own sac (of two membranes) and with an individual placenta.*



## Diagnosis

- By abdominal palpation (presence of four foetal poles)
- By measurement of uterine height, which is higher than usual for the length of gestation

## Risks for the mother

Higher rate of maternal morbidity and mortality

- Hyperemesis gravidarum
- Pre-eclampsia
- Urinary tract infections
- Low placental implantation
- Anaemia
- Uterine atony
- Complications during delivery
- Venous insufficiency

## Risks for the fetuses

Higher rate of perinatal or neonatal morbidity and mortality

- Abortion
- Vanishing twin syndrome (death of one twin during the first trimester)
- Congenital malformations
- Stuck twin syndrome (hydramnios and high weight of one twin with oligamnios and low weight for the other)
- Foetal growth retardation
- Hydramnios
- Atypical presentations
- Premature birth
- Premature rupture of membranes
- Cord prolapse
- Foetal death

## **Management**

In order to screen for complications and refer if necessary, the twin pregnancy should be regularly monitored, with at least one consultation per month during the last four months.

Refer the pregnant woman for delivery in all cases.

If the **death of one twin is diagnosed** during pregnancy, check that the other one has good foetal heart sounds and movements and that the mother feels well.

In such cases prudence is called for: ask the mother to come back two weeks later for another consultation or if there is any change necessitating referral, such as:

- premature contractions (*page 178*)
- vaginal bleeding (*pages 182-189*)
- loss of foetal movements (*pages 152-154*)
- prelabour rupture of membranes (*pages 166,167*)
- maternal fever or any other physical problem

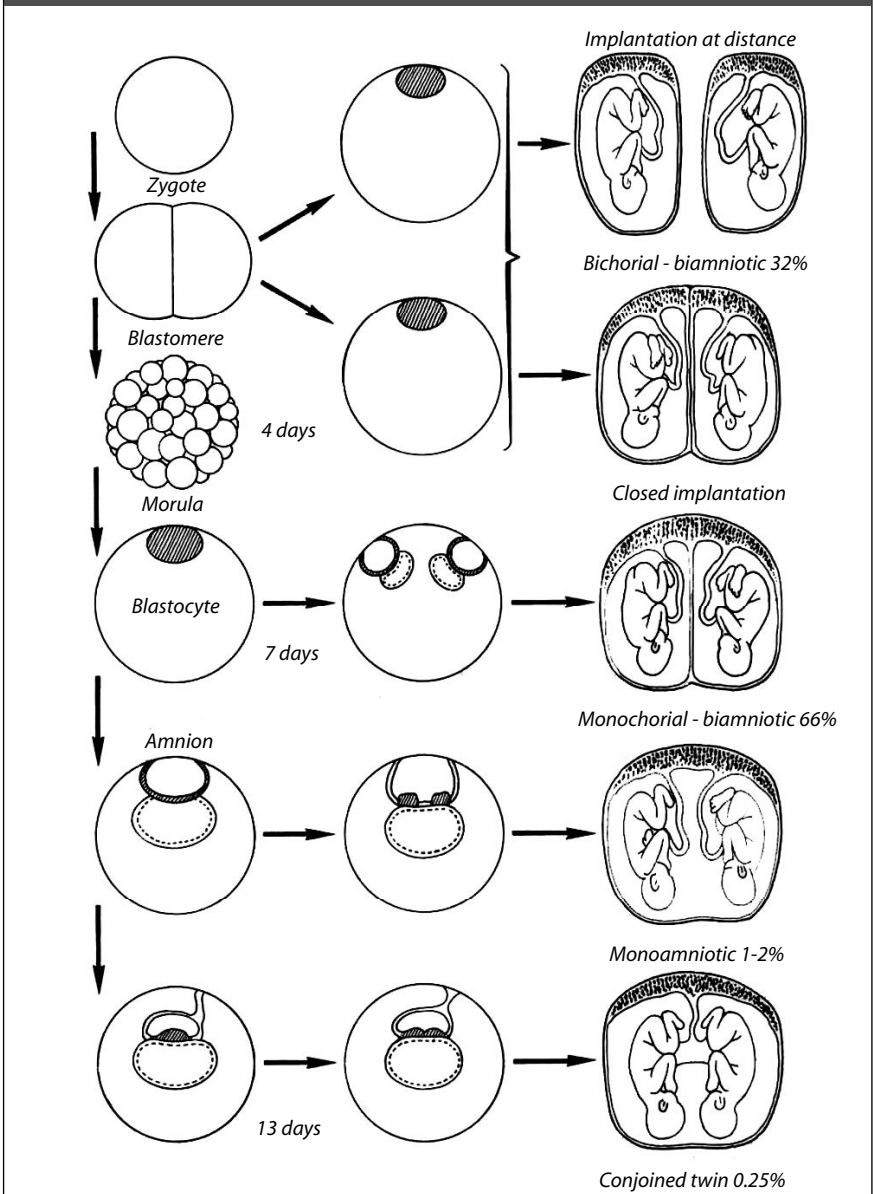
**Never attempt an external version in twin pregnancy.**

## **Multiple pregnancy**

It is possible to encounter a spontaneous pregnancy with three foetuses.

The risks for the mother and the foetuses are correspondingly greater than in twin pregnancy, but the management will be the same.

**Embryogenesis and placentation of monozygous twins** (For information).



F. Le Roy, in R. Vokaer et Coll, "Traité d'Obstétrique", Tome I, Masson, Paris, 1983.

# VAGINAL BLEEDING

---

The possible causes of bleeding differ according to the stage of pregnancy.

## First trimester

- ✓ Abortion (*pages 117, 118*)
- ✓ Ectopic pregnancy (*pages 117 & 183, 184*)

## Second trimester

- ✓ Molar pregnancy (*pages 117 & 185*)
- ✓ Late abortion
- ✓ Placenta praevia (*pages 119 & 186-187*)
- ✓ Abruptio placentae (*pages 119 & 188-189*)
- ✓ Premature contractions (*page 178*)

## Third trimester

- ✓ Placenta praevia
- ✓ Abruptio placentae
- ✓ Premature contractions

Other causes of vaginal bleeding, which can occur at any time during pregnancy, are trauma or infection (sexually transmitted diseases) of the cervix or vagina.

There are also two cases in which slight bleeding may occur without any serious consequences :

- After intercourse a woman may present vaginal bleeding due to cervical ectopia during the pregnancy
- A woman in labour may present vaginal bleeding due to the opening of the cervix.

## Definitions

Light bleeding: a clean pad or cloth takes five minutes or longer to be soaked

Heavy bleeding: a clean pad or cloth takes less than five minutes to be soaked

## Management

If the pregnant woman is fainting and/or presenting heavy bleeding, management should begin without delay even in the absence of a clear diagnosis.

For more details, see "Rapid initial assessment for vaginal bleeding" *page 116*.

**In case of vaginal bleeding an examination by speculum is indicated, per vaginal examination is contraindicated, but may be performed cautiously by an experienced person.**

## Which cases have to be referred ?

- ✓ If there is heavy bleeding
- ✓ If there is light bleeding, which may be repetitive, with or without abdominal pain (similar to dysmenorrhoea or contractions)
- ✓ If there is a history of obstetrical or surgical problems, or if the woman's general status is deteriorating.

## ABORTION

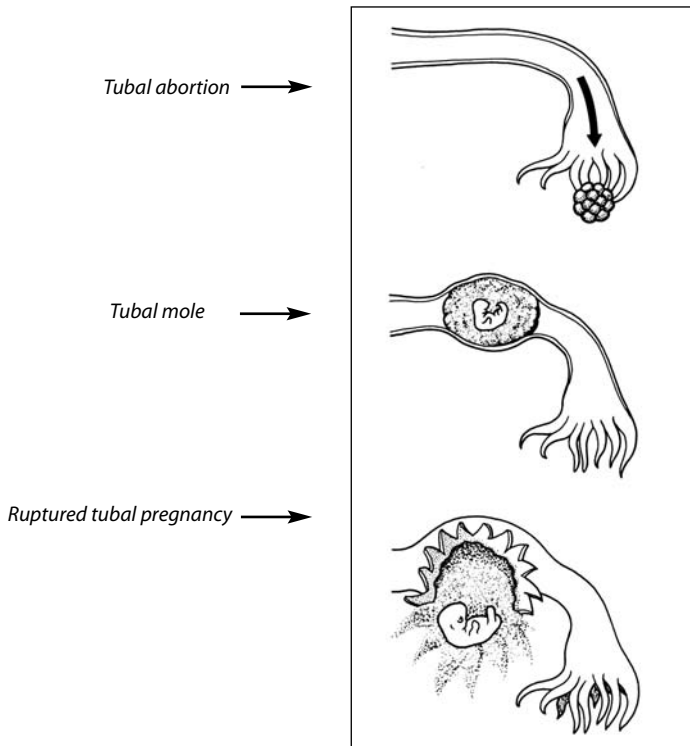
Refer to "Vaginal bleeding in early pregnancy" (pages 117, 118)

## ECTOPIC PREGNANCY

### Definition

Pregnancy in which implantation occurs outside the uterine cavity. The fallopian tube is the most common site of ectopic implantation (more than 90% of cases).

### Possible outcomes of tubal pregnancy



### Diagnosis

Check if the woman knows that she is pregnant or if she has missed a period and, if possible, perform a urine pregnancy test.

A gentle bimanual examination (per vaginal and abdominal) should be performed only by an experienced person, because an ectopic pregnancy (in the fallopian tube) can easily be ruptured.

## **ECTOPIC PREGNANCY** (contd.)

### **Differential diagnosis**

- ✓ Abortion
- ✓ Acute appendicitis
- ✓ Ovarian cyst (torsion or rupture)
- ✓ Acute or chronic pelvic inflammatory disease
- ✓ Ureteral stones

### **Symptoms and signs**

- ✓ Abdominal pain
  - ✓ Light bleeding
  - ✓ Tender adnexal mass
  - ✓ Uterus slightly larger or softer than normal
  - ✓ Amenorrhoea
  - ✓ Closed cervix
  - ✓ Fainting
- Unruptured ectopic pregnancy
    - Symptoms of early pregnancy (*irregular spotting or bleeding, nausea, swelling of breasts, bluish discolouration of vagina and cervix, softening of cervix, slight uterine enlargement, increased urinary frequency*)
    - Abdominal and pelvic pain
  - Ruptured ectopic pregnancy
    - Weakness, risk of prolapsus
    - Fast, weak pulse >110/min
    - Hypotension
    - Hypovolaemia
    - Acute abdominal and pelvic pain
    - Abdominal distension (*distended abdomen with shifting dullness may indicate free blood*)
    - Rebound tenderness
    - Pallor

### **Treatment**

*Surgery*

### **Management**

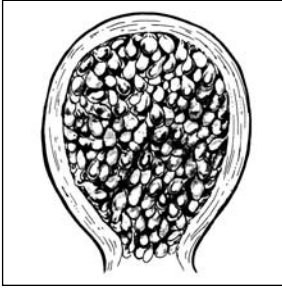
This is an emergency: refer the pregnant woman immediately for surgery.  
*For more details, see "Vaginal bleeding in early pregnancy", page 117.*



## **MOLAR PREGNANCY**

### **Definition**

Molar pregnancy is characterized by an abnormal proliferation of chorionic villi.



← Uterus with hydatidiform mole in situ.

### **Symptoms and signs**

- ✓ Heavy bleeding
- ✓ Nausea/vomiting
- ✓ Dilated cervix
- ✓ No evidence of a foetus (except partial molar)
- ✓ Cramping/lower abdominal pain
- ✓ Early onset of pre-eclampsia (< 20 weeks)
- ✓ Uterus larger than dates and softer than normal
- ✓ Partial expulsion of products of conception, which resemble grapes

### **Diagnosis**

Confirmation by laboratory test: strong elevation of  $\beta$ -HCG (human chorionic gonadotrophin), but possible with normal values.

### **Treatment**

Surgical: evacuate the uterus by aspiration.

### **Management**

Refer the pregnant woman.

Follow up with urine pregnancy tests every eight weeks for at least one year because of the risk of persistent trophoblastic disease or choriocarcinoma. If the urine pregnancy test is not negative after eight weeks or becomes positive again within the first year, refer the woman urgently to a tertiary care centre for further follow-up and management of choriocarcinoma.

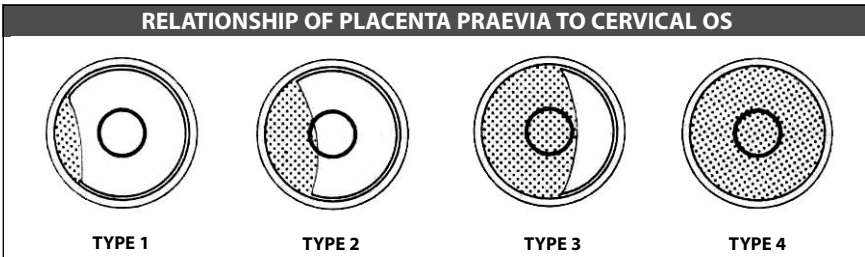
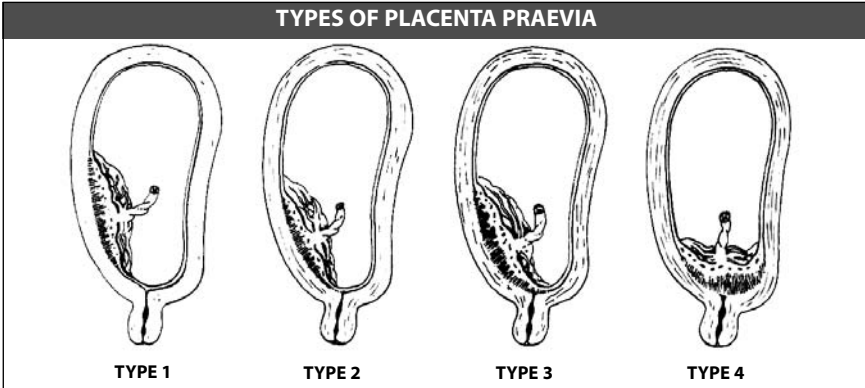
Depending on the national policy on family planning:

- A hormonal family-planning method for at least one year is recommended to prevent further pregnancy.
- Voluntary tubal ligation may be offered if the woman has completed her family (agreement of her partner is essential).

## PLACENTA PRAEVIA

### Definition

Implantation of the placenta at or near the cervix in the lower uterine segment.



### Risk factors

- History of placenta praevia, caesarean, curettage, endometritis
- Pregnancy with twins
- Uterine malformations
- Multiple abortions
- Addiction to smoking
- Multiparity

### Risks for the foetus

- Anaemia, foeto-maternal haemorrhage
- Foetal death
- Prematurity
- Foetal growth retardation
- Cord prolapse
- Malformations more frequent

**PLACENTA PRAEVIA** (contd.)**Risks for the mother**

- Anaemia
- Placenta accreta
- Thrombo-embolic disease
- Death

**Symptoms and signs**

- Light bleeding (sometimes repetitive) or heavy bleeding, may be precipitated by intercourse or contractions
- Relaxed uterus or contractions
- Foetal presentation not in pelvis/lower uterine pole feels empty; more often breech or transverse lie

**Diagnosis**

A careful speculum examination, if available, may be performed, but only by an experienced person because of the risk of sudden haemorrhage.

**Per vaginal examination is contraindicated but may be performed cautiously by an experienced person to confirm the diagnosis, once the woman is in hospital and ready for caesarean section.**

**Differential diagnosis**

- Bleeding after intercourse in woman with ectopia of the cervix due to pregnancy.
- A careful speculum examination may be performed to diagnose other causes of bleeding such as cervicitis or trauma. The presence of these conditions, however, does not rule out placenta praevia.

**Treatment**

Heavy and continuous bleeding: caesarean delivery irrespective of foetal maturity.

Light or intermittent bleeding with foetus alive but premature: rest, transfer for careful management (*see below*)

The pregnancy may continue and lead to delivery at term (type 1 and 2 may even allow vaginal delivery) or require emergency caesarean because of bleeding.

**Management**

Refer the pregnant woman if she presents (*see page 119*):

- heavy or recurrent bleeding
- lower abdominal pain or contractions

Careful management (which means observation) if:

- the haemorrhage is not heavy and persistent
- the foetus is not showing signs of distress: normal heart rate, good movements
- the pregnancy is less than 37 weeks
- the pregnant woman is confined to strict bed rest for three days after the bleeding stops.

## **ABRUPTIO PLACENTAE**

### **Definition**

Total or partial detachment of a normally situated placenta from the wall of the uterus before the foetus is delivered. See next page.

### **Risk factors**

- High blood pressure
- History of abruptio placentae
- Multiparity and advanced maternal age
- Addiction to smoking or cocaine
- Alcoholism
- Traumatism
- Short umbilical cord
- Very distended uterus

### **Symptoms and signs**

- Bleeding, which may be retained in the uterus
- Intermittent or constant abdominal pain
- Tense/tender uterus
- Decrease in/absence of foetal movements
- Foetal distress or absence of foetal heart sounds

### **Diagnosis**

Difficult, especially if the haemorrhage is concealed.

### **Risks for the foetus**

Intrauterine or perinatal death

### **Risks for the mother**

Haemorrhagic shock

Coagulopathy (clotting failure)

Maternal death

### **Treatment**

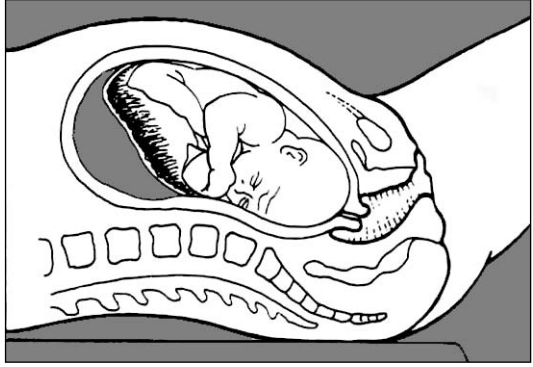
Caesarean section as soon as possible, except if vaginal delivery is imminent with fully dilated cervix, ruptured membranes, engaged presentation.

### **Management**

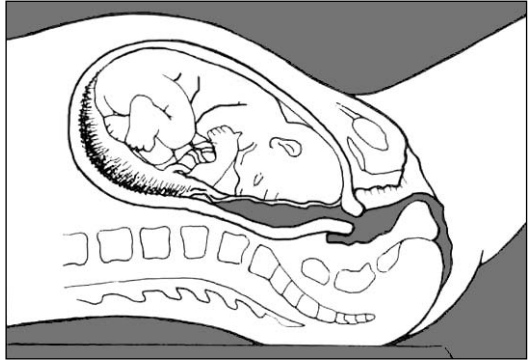
Refer the pregnant woman (*see page 119*).

**ABRUPTIO PLACENTAE** (contd.)

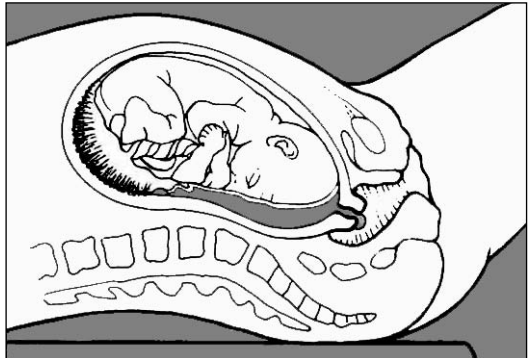
*Non-externalized  
retroplacental haematoma*



*Externalized  
retroplacental haematoma*



*Retroplacental haematoma  
with partially externalized bleeding*



# VAGINAL DISCHARGE

---

## **Candida albicans:** fungus

The main source of infection is the gastrointestinal tract, but sexual transmission may occur.

In the majority of women candidiasis is asymptomatic. The symptomatic disease is associated with an increase in the number of yeasts present in the vagina (predisposing factors: pregnancy, antimicrobial therapy, oral contraceptives, immunosuppression, AIDS, glycosuria).

### Vulvovaginal candidiasis:

- Pruritus vulvae and vaginal discharge (whitish, odourless, curd-like plaques adhering to the vagina)
- Possible erythema and/or oedema of the vulva and vagina

### Risks for the foetus:

- Muco-cutaneous candidiasis, due to transmission during delivery
- Rare but fatal disseminated pulmonary candidiasis, due to rising infection during pregnancy

### Treatment

Nystatin 100 000 IU intravaginally, daily for 14 days

or

Fluconazole 150 mg orally as a single dose

## **Trichomonas vaginalis:** parasite

Trichomoniasis is a sexually transmitted disease.

In men:

- mostly asymptomatic; occasionally urethritis

In women:

- yellow-green, frothy discharge, not malodorous
- pruritus vulvae
- dysuria
- dyspareunia

### Treatment

Metronidazole:

2 g orally as a single dose if treatment is imperative during the first trimester, but may also be given during the second and third trimesters of pregnancy

or

400 or 500 mg orally, twice daily for 7 days, after first trimester.

### **Bacterial vaginosis**

Changes in the vaginal bacterial flora: lactobacilli are no longer predominant and *Gardnerella vaginalis* or *Mycoplasma hominis* increase.

It is not clear whether this is a sexually transmitted disease.

Women present a homogeneous white vaginal discharge with a fishy smell, but 50% of cases are asymptomatic.

#### Risks for the foetus and the mother:

- late abortion
- premature rupture of membranes
- prematurity
- chorioamnionitis
- postpartum endometritis

#### Treatment

Metronidazole:

200 or 250 mg orally, 3 times daily for 7 days, after the first trimester

or

2 g orally as a single dose if treatment is imperative during the first trimester, but may also be given during the second and third trimesters of pregnancy.

# VITAMIN A DEFICIENCY

Vitamin A is essential for maintaining normal health and physiology, and for growth and development. During pregnancy there is a greater need for vitamin A for both the mother and the foetus.

Although the increase in requirement during pregnancy is relatively small, in countries where vitamin A deficiency (VAD) is endemic, women often experience deficiency symptoms such as night blindness, xerophthalmia and Bitot's spots.

Severe vitamin A deficiency and overload are both teratogenic in animals and associated with adverse reproductive outcomes. Although similar outcomes in human populations are not documented, the possibility of risk must be considered.

WHO currently recommends that the relatively small additional need for vitamin A during pregnancy should be met through diet (*see annex III.B*) or a supplement not exceeding 10 000 IU daily throughout pregnancy.

## **Maternal supplementation during pregnancy**

*(Either during the first 60 days following conception when there is a teratogenic risk or after the first 60 days following conception, for women whose habitual intakes are above the RDA<sup>20</sup> or below the RDA)*

**For fertile women**, independent of their vitamin A status, 10 000 IU (3 000 µg RE<sup>21</sup>) is the maximum daily supplement to be recommended at any time during pregnancy.

**Where VAD is endemic** among children under school age and maternal diets are low in vitamin A, health benefits are expected for the mother and her developing foetus with little risk of detriment to either, from :

- either a daily supplement not exceeding 10 000 IU vitamin A (3 000 µg RE) at any time during pregnancy;
- or a weekly supplement not exceeding 25 000 IU vitamin A (8 500 µg RE).

### In this regard:

- a single dose > 25 000 IU is not advisable, particularly between day 15 and day 60 following conception (day 0);
- beyond 60 days after conception, the advisability of providing a single dose of > 25 000 IU is uncertain; any risk for non-teratogenic developmental toxicity is likely to diminish as pregnancy advances. In the case of a pregnant woman who may be reached only once during pregnancy, health workers should balance possible benefits from improved vitamin A status against potential risk of adverse consequences from receiving a supplement.

## **Where habitual vitamin A intakes exceed at least three times the RDA**

(about 8000 IU or 2 400 µg RE), there is no demonstrated benefit from taking a supplement. On the contrary, the potential risk of adverse effects increases with higher intakes – above about 10 000 IU – if supplements are routinely ingested.

WHO, UNICEF and the International Vitamin A Consultative Group (IVACG) recommend that, in areas of VAD endemicity, high doses of supplemental vitamin A (200 000 IU) be given to breastfeeding women during the infertile postpartum period lasting 4 to 6 weeks.

---

<sup>20</sup> RDA: Recommended dietary allowance

<sup>21</sup> RE: Retinol equivalents 1RE = 1µg all-transretinol = 0,0035 µmol = 3,33IU/1µmol = 286 µg retinol = 951 IU



# **ANNEXES PART III**

Antenatal Problems

## ANNEX III.A.1 VACCINATION AND PREGNANCY

<b>VACCINES</b>	<b>CONTRAINDICATED DURING PREGNANCY</b>	<b>COMMENTS</b>
- Viral vaccines -		
* Live attenuated viruses		
<b>Oral polio</b>	Yes	It is not necessary to interrupt the pregnancy of a woman who was vaccinated before she was known to be pregnant.
<b>Measles</b>	Yes	It is not necessary to interrupt the pregnancy of a woman who was vaccinated before she was known to be pregnant.
<b>Yellow fever</b>	Yes	<u>Contraindicated during the first three months of pregnancy</u> , unless there is a major risk of infection with the virus. Vaccination is necessary in areas where the disease is endemic.
<b>German measles</b>	Yes	Given the teratogenic potential of the vaccine (especially during the first three months of pregnancy), women must not be vaccinated until delivery. Vaccination of women of childbearing age who have not been vaccinated is essential, however, <u>but must be accompanied by contraception</u> one month before and two months after vaccination.
<b>Chickenpox</b>	Absolutely contraindicated	Must not be administered to a pregnant woman at any stage of her pregnancy.
* Dead or inactivated viruses		
<b>Injectable inactivated polio</b>	<b>No</b>	Best polio vaccine for pregnant women.
<b>Influenza</b>	<b>No</b>	Vaccination is recommended during the flu season for women <u>who are past their 13th week of pregnancy</u> and at any stage of their pregnancy for all women at high risk of developing the serious form of influenza.
<b>Hepatitis A</b>	Yes	As the innocuousness of the vaccine has not been definitively established, the risk that may be involved in vaccinating a pregnant woman must be weighed against the potential benefit.
<b>Rabies</b>	<b>No</b>	May be used at any stage of pregnancy regardless of whether infection is suspected or confirmed.
<b>Hepatitis B</b>	<b>No</b>	It is preferable to vaccinate only when there is a high risk of contracting this disease and in areas where the disease is endemic.

## ANNEX III.A.2 VACCINATION AND PREGNANCY (contd.)

<b>VACCINES</b>	<b>CONTRAINDICATED DURING PREGNANCY</b>	<b>COMMENTS</b>
- Bacterial vaccines -		
* Live attenuated		
<b>BCG</b>	Yes	Not absolutely contraindicated during pregnancy, but not advised.
* Inactivated		
<b>Pertussis</b> (whooping cough)	Yes	The vaccine often triggers strong reactions and hyperthermia. It is not indicated for adults and there is no point in administering it to pregnant women since whooping cough is a childhood disease.
<b>Cholera</b>	<b>No</b>	Harmless for pregnant women.
* Toxoids		
<b>Diphtheria</b>	Yes	Given the reactogenic nature of the vaccine, which often has side-effects in adults, vaccination is not recommended.
<b>Tetanus</b>	<b>No</b>	Three doses of vaccine are recommended for women of childbearing age before or during pregnancy to prevent neonatal tetanus.
* Polyisidic		
<b>Pneumococcal Diseases</b>	Yes	Not advisable during the first three months of pregnancy. Vaccinate only if necessary during the last three months.
<b>HIB</b> (Haemophilus Influenzae Type B)	Yes	The innocuousness of the vaccine has not been definitively established. Vaccinate only if there is a high risk of infection (meningitis or pneumonia).
<b>Meningococcal meningitis groups A and C</b>	<b>No</b>	The vaccine is innocuous at all stages of pregnancy and should be administered if there is any risk of infection.
<b>Typhoid</b>	Yes	May be administered at any stage of pregnancy, but only in risk areas.

This annex «Vaccination and pregnancy» comes from :  
*ICRC, Expanded Programme of Immunization guidelines, to be published in 2005.*

	VITAMIN A	IRON	FOLIC ACID
<b>Excellent/more concentrated sources</b>	Liver (fowl and medium-to-large animals), fish liver oils, palm oil	Meat (especially liver), fish, eggs	Liver, kidney, green leafy vegetables (spinach, cassava leaves, amaranth, sweet potato leaves, beetroot leaves, rhubarb chard), yeast, broccoli
<b>Medium sources</b>	Butter, eggs (egg yolk), orange/yellow and crookneck squash, cheese, yogurt, medium-fat fish, carrots, green leafy vegetables (spinach, cassava leaves, amaranth, sweet potato leaves, beetroot leaves, rhubarb chard), broccoli, red peppers, green leguminous vegetables, pumpkin, yellow maize, apricots, mangoes, papaya, pineapple	Cereals (maize, rice and wheat contain moderate amounts, but consumed in relatively large quantities are quite significant), beans, peas, green leafy vegetables (spinach, cassava leaves, amaranth, sweet potato leaves, beetroot leaves, rhubarb chard), broccoli, nuts	Almost all other vegetables (folic acid is present in all vegetable tissue), groundnuts
<b>Relatively poor sources</b>	Milk, lean fish, red meat, fowl, bananas, tomatoes, germinated pulses, lentils, green peas	Eggs, milk	Normally, in a diet that meets energetic requirement, folic acid requirements are also met
<b>Remarks</b>	Dietetic fats enhance absorption of liposoluble vitamins. Vitamin E enhances bioavailability of vitamin A (preventing its oxidation)	Absorption is increased when combined with vitamin C, so it is advisable to add e.g. lemon to salads.  Absorption is decreased by tannins in e.g. tea and coffee, so it is recommended not to drink tea/coffee with meals	Ascorbic acid (vitamin C) also reduces destruction of folates during extraction. Folates are easily destroyed by heat, oxidation and UV. Some 50% nevertheless remain during storage, processing and cooking

# **BIBLIOGRAPHY**

Antenatal Guidelines for Primary  
Health Care in Crisis Conditions

## BIBLIOGRAPHY

---

### PART I

ICRC, *Assistance Policy*, International Committee of the Red Cross, Geneva, April 2004.

ICRC, *Addressing the Needs of Women Affected by Armed Conflict*, International Committee of the Red Cross, Geneva, 2004.

ICRC, *Planning, Monitoring, Evaluation database*, International Committee of the Red Cross.

Du Mortier S. et al., *Boîte à outils pour l'analyse et la résolution des problèmes*, International Committee of the Red Cross, Democratic Republic of the Congo, 2003.

WHO, El Bindari-Hammad A, Smith D.L, *Primary Health Care Reviews, Guidelines and Methods*, World Health Organisation, Geneva, 1992.

King J.A., Lyons Morris L., Taylor Fitz-Gibbon C., *How to Assess Program Implementation*, Sage Publications, California, 1987.

UNHCR, *Reproductive Health in Refugee Situations*, United Nations High Commissioner for Refugees, Geneva, 1999.

WHO, *WHO Antenatal Care Randomized Trial: Manual for the Implementation of the New Model*, World Health Organisation, Geneva, 2002.

Aga Khan Foundation, *Primary Health Care Management Advancement Programme, Assessing the Quality of Service*, Module 6, User's Guide, Aga Khan Foundation, Thailand, 1997.

AEDES, *Système d'information sanitaire*, Association Européenne pour le Développement et la Santé, Brussels, 1996.

UNFPA, *Reproductive Health Kits for Crisis Situations*, United Nations Fund for Population Activities, January 2003.

## BIBLIOGRAPHY

---

### PART II

WHO, *La fiche maternelle tenue à domicile. Comment la mettre au point, l'adapter et l'évaluer*, World Health Organisation, Geneva, 1994.

WHO, *Integrated Management of Pregnancy and Childbirth – Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors*, Department of Reproductive Health and Research, World Health Organisation, Geneva, 2003.

Bennett V.R., Brown L.K., *Myles Textbook for Midwives*, 12th edition, Churchill Livingstone, United Kingdom, 1993.

Columbia University, *Averting Maternal Death and Disability (AMDD)*, New York

<http://www.amdd.hs.columbia.edu/>

Hijab N., Carriere C., *Program Orientation: A Tool for Self-Learning*, February 2002.

Paxton A., Maine D., Hijab N., *Using the UN Process Indicators of Emergency Obstetric Service: Questions and Answers*, January 2003.

Hohlfeld P. et al., *Le livre de l'interne, Obstétrique*, 2nd edition, Médecine-Sciences/ Flammarion, Paris, 2000.

JHPIEGO, *Emergency Obstetric Care: Quick Reference Guide for Frontline Providers*, Maternal Neonatal Health, JHPIEGO, Baltimore, USA, September 2003.

Lansac J., Berger C., Magnin G., *Obstétrique pour le praticien*, 2<sup>nd</sup> edition, SIMEP, Paris, 1990.

Lansac J. et al., *Pratique de l'accouchement*, 2<sup>nd</sup> edition, SIMEP, Paris, 1992.

Liselele H.B. et al., "Maternal height and external pelvimetry to predict cephalopelvic disproportion in nulliparous African women: a cohort study", *British Journal of Obstetrics and Gynaecology*, August 2000, Vol. 107, pp. 947-952.

## BIBLIOGRAPHY

---

### PART III

WHO, *Female Genital Mutilation: Integrating the Prevention and the Management of the Health Complications into the Curricula of Nursing and Midwifery – A Teacher's Guide*, World Health Organisation, Geneva, 2001.

WHO, *Management of Pregnancy, Childbirth and the Postpartum Period in the Presence of Female Genital Mutilation*, World Health Organisation, Geneva, 2001.

*ICRC Malaria Guidelines*, International Committee of the Red Cross, Geneva, February 2004.

Philip R. Fischer, «Malaria and newborns», *Journal of Tropical Pediatrics*, Vol. 49, No. 3, June 2003.

WHO, *Clinical Management of Survivors of Rape: A Guide to the Development of Protocols for Use in Refugee and Internally Displaced Person Situations*, World Health Organisation, Geneva, 2002.

*ICRC Health in detention documentation*, International Committee of the Red Cross, Geneva, 2004.

Amone-P'Olak K., «The impact of civil strife on adolescent girls' reproductive health», *Africa Health*, March 2003, pp. 15 -18.

WHO, *Guidelines for the Management of Sexually Transmitted Infections*, World Health Organisation, Geneva, 2003.

*ICRC's operational framework in regard to HIV/AIDS for victims of armed conflict*, International Committee of the Red Cross, Geneva, 2004.

WHO, *Prevention of Mother-to-Child Transmission of HIV: Selection and Use of Nevirapine*, Department of Reproductive Health and Research, World Health Organisation, Geneva, 2001.

*ICRC Expanded Programme of Immunization Guidelines*, International Committee of the Red Cross (to be published in 2005).

WHO, *Safe Abortion: Technical and Policy Guidance for Health Systems*, Department of Reproductive Health and Research, World Health Organisation, Geneva, 2003.

WHO, *Safe Vitamin A Dosage during Pregnancy and Lactation*, World Health Organisation, Geneva, 1998.

Burns A.A. et al., *Where Women Have No Doctor*, Hesperian Foundation, California, 2000.



## MISSION

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance. It directs and coordinates the international relief activities conducted by the Movement in situations of conflict. It also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement.

---

## FOR FURTHER INFORMATION AND RESOURCES, PLEASE CONTACT:

Your National Red Cross or Red Crescent Society or the nearest ICRC delegation



*"A mother is the truest friend we have, when trials, heavy and sudden, fall upon us; when adversity takes the place of prosperity; when friends who rejoice with us in our sunshine desert us, when troubles thicken around us, still will she cling to us, and endeavor by her kind precepts and counsels to dissipate the clouds of darkness, and cause peace to return to our hearts."*

Washington IRVING

International Committee of the Red Cross  
Health and Relief / Geneva  
19 Avenue de la Paix  
1202 Geneva, Switzerland  
**T** + 41 22 734 6001 **F** + 41 22 733 2057  
**E**-mail: [icrc.gva@icrc.org](mailto:icrc.gva@icrc.org) or [shop.gva@icrc.org](mailto:shop.gva@icrc.org)  
**www**.icrc.org

